

EDUCATION FOR ALL IN BANGLADESH**WHERE DOES BANGLADESH STAND IN
TERMS OF ACHIEVING THE EFA GOALS BY
2015?**

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ABBREVIATIONS AND ACRONYMS

BANBEIS – Bangladesh Bureau of Education Information and Statistics

BAPS – BRAC Adolescent Primary School

BBS - Bangladesh Bureau of Statistics

BPS – BRAC Primary School

BRAC - Bangladesh Rural Advancement Committee

CAMPE – Campaign For Popular Education

DHS - Demographic and Health Survey

DPE – Directorate of Primary Education

EFA – Education For All

FFE – Food For Education

GDP – Gross Domestic Product

GER – Gross Enrollment Rate

GNI – Gross National Income

GoB - Government of Bangladesh

GPS – Government Primary School

HIES - Household Income and Expenditure Survey

IDA – International Development Association

IDEAL – Intensive District Approach to Education for All

MDG - Millennium Development Goal

MoPME – Ministry of Primary and Mass Education

NAPE – National Academy for Primary Education

NCTB – National Curriculum and Textbook Board

NER – Net Enrollment Rate

NGO – Non Government Organization

NPA – National Plan of Action

NRNGPS – Non-registered Non-Government Primary School

PEDP - Primary Education Development Project

PLCE – Post Literacy and Continuing Education

PMT – Proxy Means Testing

PTI – Primary Teacher Institute

PTR – Pupil Teacher Ratio

RNGPS – Registered Non-Government Primary School

ROSC – Reaching Out of School Children

SDC – Swiss Development Cooperation

SMCs- School Management Committees

TIMMS – Trends in International Mathematics and Science Study

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION.....	1
Government EFA Strategy	1
Data, Methodology and Limitations	3
Bangladesh Development Context.....	3
Chapter I ; PROVISION AND FINANCING OF PRIMARY EDUCATION IN BANGLADESH	5
Section I: Management and Provision of Primary Education in Bangladesh	5
Section II: Financing of Primary Education in Bangladesh.....	9
2.1. Historical Trends in Primary Education Financing	9
2.2. Composition of Public Expenditure in Primary Education	12
2.3. Cross Country Comparison of Primary Education Spending	13
2.4. Equity in Public Education Spending.....	14
2.5 Marginal incidence analysis of stipend program.....	19
Chapter II : PROGRESS IN PRIMARY SCHOOL ENROLLMENT RATE SINCE 2000.....	21
Chapter III : PROGRESS IN ADULT LITERACY RATE SINCE 2000	24
Chapter IV : PROGRESS IN PRIMARY COMPLETION RATE SINCE 2000	26
Section I: How Much Has Primary Completion Rate Improved Since 2000?.....	26
Section II – Determinants of Educational Attainment in Bangladesh	29
Section 2.1: Data Description	29
Section 2.2: Estimation of the Determinants of Education Attainment: A Tobit Model.....	30
Chapter V : ASSESSING LEARNING OUTCOMES IN PRIMARY EDUCATION.....	32
Section I: Studies on Primary Student Achievement Tests in Bangladesh	32
Section II: Possible Reasons for Low Levels of Student Achievement	34
Chapter VI : POLICY RECOMMENDATIONS FOR BANGLADESH.....	35
Section I: Better Allocation of Public Spending in Primary Education	35
Section II: Ways to Improve the Quality of Primary Schooling	36
Section III: Improving Governance in the Bangladesh Educational System	38

TABLES

Table 1: Cross Country Comparison of Primary Enrollment Rate	3
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Table 2: Health Indicators in South Asia.....	4
Table 3: Number of Primary Education Institutions, Teachers and Students Enrolled in Bangladesh (2005).....	7
Table 4: Distribution of annual public primary education subsidy, per capita consumption and population across expenditure quintiles	15
Table 5: Distribution of annual government and household primary schooling spending across expenditure quintiles	17
Table 6: Primary school stipend program in Bangladesh	18
Table 7: Average odds of participation for primary school recipients	18
Table 8a: Primary School Stipend Recipient by Province and Poverty Quintile	18
Table 8b: Primary School Stipend Recipient by Province and Poverty Quintile	19
Table 9: Marginal Odds of Participation to the Stipend Program	20
Table 10: Gross and Net Primary Enrollment in Bangladesh.....	21
Table 11: Summary Statistics for Children Aged 6-15 in Bangladesh	30

FIGURES

Figure 1: Trend in Primary Enrollment in Bangladesh (1980-2005).....	6
Figure 2: Public Expenditure on Education as Share of Total Public Expenditure and GDP.....	11
Figure 3: Primary and Secondary Education Expenditure as Share of Revenue and Development Expenditure.	12
Figure 4: Composition of Total Public Expenditure (Revenue and Development) in Primary	13
Figure 5: Cross Country Comparison of Per Student Spending	14
Figure 6: Lorenz curve - Distribution of public subsidies among students from different expenditure quintiles	16
Figure 7: Net Primary Enrollment Rate Across Expenditure Quintiles in Bangladesh	23
Figure 8: Literacy Rates in Bangladesh by Expenditure Quintile over 2000-05	25
Figure 9: Primary Completion Rates of Children 10-15 in Bangladesh by Gender and.....	26
Figure 10: Primary Completion Rates of 10-15 Year Old Children in Bangladesh by Poverty	27
Figure 11: Primary Completion Rates of Children 15-19 in Bangladesh by Poverty Quintile and Gender between 2000 and 2005	27
Figure 12: Primary Completion Rates across Generations in Bangladesh between 2000 and 2005	28
Figure 13: Primary Completion Rates across Generations in Bangladesh between 2000 and 2005.....	28

BOXES

Box 1: Policy Reforms of PEDP II.....	2
Box 2 : Education Service of BRAC	8
Box 3 : Description of the stipend program.....	17

ANNEXES

Annex 1: Management Structure of Primary Education in Bangladesh	41
Annex 2: Tobit estimations of Grade Attainment for Children Aged 6-15 in Bangladesh.....	42
Annex 3: Tobit Estimations of Grade Attainment by Gender and Stipend Status	43
Annex 5: Tobit Estimation of Grade Attainment.....	44
Annex 6: IV Estimation of Grade Attainment	45
Annex 7: Policy Matrix	46

REFERENCES

EXECUTIVE SUMMARY

Objective of the Policy Note

1. The objectives of this policy note are twofold: first, take stock of where Bangladesh stands in terms of achieving the Education For All (EFA) goals; and second, suggest policy recommendations that could help Bangladesh to meet the EFA goals by 2015. Among the six EFA goals (cf. box below), the policy note will focus mainly on: (i) universal primary enrollment for all children; (ii) universal primary completion; (iii) gender parity in education; (iv) adult literacy; and (v) quality of education. This is because these areas can be more meaningfully analyzed with reasonably reliable information from various sources.

The Education For All Goals

- (1) Ensure universal primary education for all children by 2015.
- (2) Eliminate gender disparities in primary and secondary education by 2005, and achieve gender equity in education by 2015.
- (3) Improve early childhood care and education.
- (4) Ensure equitable access to “life skills” programs.
- (5) Achieve a 50 percent increase in adult literacy by 2015, especially for women.
- (6) Improve all aspects of the quality of education.

Data and Limitations

2. Data and information from different sources were used to assess the progress made in achieving the EFA goals: Household Income and Expenditure Surveys (HIES 2000 & 2005), Demographic and Health Surveys (DHS 2000 & 2004) and administrative data from DPE, the Baseline Survey of PEDP II (2005).

The HIES 2005 is used to estimate an econometric model of educational attainment. The results of the estimations should be interpreted with caution as it is only possible to use a limited number of variables. The survey contains no information about school characteristics (such as class size, school management or teacher time on task) or student achievement. It also provides no information on urban community characteristics or children’s learning environment.

EFA and Bangladesh

3. EFA is an international commitment to bring the benefits of education to “every citizen in every society”. Many developing countries, including Bangladesh, have made the commitment to achieve the EFA targets by 2015.

4. Bangladesh has already achieved gender parity in both education levels and has made progress towards increasing both primary and secondary enrollment and. About half of the 16.2 million students enrolled in the primary education institutions are female. The share of female enrollment at the secondary levels has exceeded 50 percent. While India and Pakistan exhibited a gross enrollment rate (GER) of 75.2 and 70.5 respectively, in the early 2000s, Bangladesh had achieved a GER of 86.1% with only Sri Lanka doing better, according to national

household surveys. Similarly, Bangladesh recorded a net enrollment rate (NER) of 62.9% compared to 54.8% and 50.5% respectively for India and Pakistan during the same period.

5. However, there is a considerable discrepancy in primary enrollment rates between household based surveys (HIES and DHS) and the recent PEDP II Baseline survey. Both gross and net enrolment rates calculated from HIES 2005 are significantly lower than those reported in the PEDP II Baseline survey. There may be multiple reasons for such discrepancy: non representativity of the Baseline survey at the national level, varying population estimates used and possible effects of inflated enrollment figures by school administrators (cf. MDG report in Bangladesh, 2005).

6. Given that government interventions are not efficiently targeted towards the poorest students, the NER of children from the poorest quintiles has not increased much over time. The HIES data show that the NER of children from the poorest quintile has not only increased modestly from 52.6% in 2000 to 56.8% in 2005 but it is still very low. The same is true when primary completion rate is considered. Further, the gender gap in completion rate (in favor of girls) is wider among children 15-19 of the poorest quintile (14%) compared to that of the richest quintile (1.9%). This requires policymakers to pay more attention to boys in poor households in order to raise their educational attainment.

Is Bangladesh Likely to Achieve Universal Primary Enrollment and Completion?

7. Bangladesh is unlikely to achieve universal primary enrollment and completion by 2015 if the current trends in access and completion do not improve. The NER of children aged 6-10 has modestly increased by about 4 percentage points between 2000 and 2005 although primary completion rate of children 15-19 has gone up by over six percentage points in the same period. While NER has grown by only 1.1 per cent per annum between 2000 and 2005, its annual growth rate needs to reach 5 per cent for universal enrollment to be achieved by 2015. Similarly, completion rate would have to grow by over 7 per cent per annum –instead of the current rate of 2.6 per cent- to help meet the EFA goal of universal completion rate.

Will the EFA Goal of A 50% Increase in Adult Literacy Rate Be Met?

8. Bangladesh is likely to meet the adult literacy target by 2015 if the national literacy rate increases at the current rate of 3 per cent per annum. Literacy rate has increased from 45.6% to 52.7% between 2000 and 2005, as estimated from the HIES data. Similarly, if the trend in female literacy remains unchanged at 5 per cent, the EFA target for female literacy will also be achieved before 2015.

What Has Happened to the Quality of School in Bangladesh?

9. Progress in school quality is more difficult to assess because of the lack of systematic assessment and monitoring of learning achievement results¹. As many developing countries, Bangladesh does not systematically collect learning achievement tests that are nationally representative of primary school students. Therefore, the quality of primary education was assessed by reviewing some studies related to learning outcomes in Bangladesh. They generally point to low levels of learning achievement, poor literacy and numeracy skills acquired during the primary school cycle as well as to a gender gap in test scores in favor of boys (cf.

¹ We assume that the quality of school is proxied by the learning achievement tests, bearing in mind that there are other important dimensions of school quality that cannot be captured by test scores.

Greeny, Khandker, and Alam (1999); Asadullah et al. (2006); Education Watch report (2001); IDEAL assessment; Bangladesh National Assessment (2001) among others).

Provision and Financing of Primary Education

10. The Government continues to be the main provider and financier of primary education. About 47% of schools are Government Primary Schools (GPS). Registered Non Government Primary Schools (RNGPS), which are privately operated but heavily subsidized, represent about one fourth of the existing schools. The remaining schools are NGO, religious and other non-government schools. In addition to direct financing, the Government has introduced demand side interventions. These include stipend and fee waiver programs, incentives for the private sector to provide education services and recently introduced community based programs for increased provision for out of school children.

Education Expenditures in Bangladesh

11. Education expenditures increased significantly from 1.6 per cent of total GDP in 1990 to over 2.4 per cent in 1995-96. Since 1999, the share of education in GDP remained stable at 2.2 per cent. Public education expenditure as a share of total government spending has increased from about 12 per cent in 1990-91 to 16 per cent in 1999-2000 and has remained around 15 per cent.

12. The share of GDP devoted to education in Bangladesh is currently at 2.2%, while the average share of GDP devoted to education was 4.5% for developing countries and 3.8% for countries in South and West Asia in 2002 (cf. UNESCO 2006, cited in Al Samarrai, 2007). In addition, Bangladesh is still spending less per student in primary education relative to other developing countries with similar per capita income.

13. About 98% of primary education revenue expenditures are constituted of salaries and allowances whereas total public spending in primary education (both revenue and development) amounts to about Tk. 28 billion. The share going to salaries has remained constant since 2000.

Equity in Public Spending on Primary Education

14. The benefit incidence of public spending is regressive as the poor are less likely to go to school. In particular, the poorest quintile benefits less from the primary education subsidy (17 per cent) than the richest quintile who gains 26 per cent of total primary education spending. In other words, public spending is less efficiently targeted towards the poorest children. Furthermore, the average benefit incidence analysis shows that a significant portion of the stipend subsidy leaks out to children from richer households: about 24 percent of the stipend recipients belong to the 40 per cent richest quintile. The marginal benefit incidence analysis confirms this result in so far as children from the richest quintile would still receive about 10 per cent of an increase in the size of the stipend program.

Determinants of Education Attainment

15. The econometric analysis of the determinants of education attainment suggest, all other things being equal, that girls tend to attain higher levels of education than boys; that children from poor families tend to withdraw sooner; that parental education matter for the child's grade attainment and in particular the impact is significantly larger the higher the education level of the

head of the household; that belonging to a household in which no adult member is literate significantly impaired a child as far as reaching higher grades.

Issues and Policy Recommendations

A- Access to Schooling for the Disadvantaged Groups

Better targeting of government subsidy

16. Given that the share of GDP going to education is low (2.2% in 2005), a more progressive redistribution of government primary education spending to the children from poorest and disadvantaged groups and a better targeting of the primary stipend program to the poorest students, are likely to help Bangladesh achieve its EFA targets.

Metropolitan Areas²

17. The pervasive poverty in Metropolitan areas and the lack of access to education for many children, including those from indigenous groups, signal the pressing need to tailor the stipend program to the most needy and meritorious students.

B- Quality of Primary Schooling

Improving the overall quality of schooling is a pressing task in order to substantially raise enrollment and help more children complete primary school with the appropriate skills in literacy and numeracy.

Improve Facilities

18. Despite decades of infrastructure development, the stock of physically available facilities for minimum conducive learning remains inadequate. A large number of classrooms and local administrative facilities need to be repaired and/or renovated.

Improve Teacher Quality and Incentive

19. Recruitment of competent instructors, revision of teacher training curriculum, and an effective initial in-service training support would be critical in improving the overall teacher quality. Currently, the system is severely constrained by a shortage of qualified staff at the Primary Teacher Institutes (PTIs) and the National Academy of Primary Education (NAPE). Hiring local teachers and providing opportunities for training and professional career growth is critical to ameliorating the quality of teachers. Further, building an internal incentive structure within the school system to reward performing teachers is likely to be sustainable. Within PEDP II, it may be worth piloting different approaches to compensate teachers and schools performing better.

Maintain the System of Double Shift in the Underserved Areas

20. The planned policy of moving to a single shift system may need to be reviewed. International evidence shows mixed effects of class size reduction on student achievement (cf. Hanushek, E. et al., 1992, 1996). The GoB estimates that the current provision of 30,000 classrooms will not be adequate to help convert double shift schools into single shift schools to reduce overcrowded classrooms. However, converting double shift schools into single shift schools is likely to exacerbate the supply constraints. Adopting double or single shift system

² A Metropolitan area is administratively based on a group of municipalities or an equivalent entity under a division.

should be based on the excess or shortage in supply identified in different areas. Instituting a stronger partnership with NGOs– for instance in the area of innovative and cost effective approaches for both access and quality will be critical in reaching those children who are out of school.

C- Improving Governance in the Bangladesh Education System

Institutional Reforms

21. Key institutional reforms such as implementation of the human resource development plan and filling in vacancies –within PEDP II- will help strengthen the capacities of the various line Divisions in the Directorate of Primary Education (DPE), Primary Teacher Institutes (PTI) and National Academy of Primary Education (NAPE). Staff needs to be retained in positions for at least 3 years. Efficient teacher recruitment, teacher training and deployment procedures would also be crucial in improving the overall governance of the education system.

Curriculum and Textbooks

22. The National Curriculum and Textbook Board (NCTB) would benefit from hiring staff with relevant competencies and dedicated staff with curriculum development as their core function. Improving the quality of textbooks produced and the transparency in the distribution of textbooks is likely to help ameliorate the learning environment of children and achieve universal primary enrollment and completion rate.

Improve Monitoring and Evaluation

23. Strengthening the capacity of the Education Management Information System (EMIS) to develop a useful and credible M & E system for better planning and management of the primary education sector is critical. The option to outsource data collection and analysis through collaboration with a third party institution should be considered in order to enhance accountability and transparency in the utilization of public resources.

24. Conducting more rigorous evaluations of school quality initiatives would also inform policymakers about the likely impacts of various policy interventions on education outcomes (such as enrollment, completion, student achievement, etc.) and create a culture of learning and evaluation based policy.

Decentralize the school system

25. The success of the decentralization process will depend greatly on ensuring that systematic transfer of funds takes place and personnel at the local levels receive relevant training on financial management. These reforms will have to be accompanied by proper monitoring and evaluation mechanisms to ensure accountability and transparency. Furthermore, developing information campaigns on the delivery of services and resources from the Central Government to local schools to empower local communities would be instrumental in improving the quality of schooling and learning outcomes.

INTRODUCTION

1. Education for All (EFA) is an international commitment to bring the benefits of “education to every citizen in every society”. In 1990, a World Conference was organized in Jomtien, Thailand to acknowledge the importance of ensuring that every child in every country gets a chance to complete at least primary education. The goal was then set to provide *Education For All* by the year 2000. After a decade of slow progress, the commitment was reaffirmed by the World Education Forum in April 2000 in Dakar, Senegal and then again in September 2000, at the United Nations Headquarters, New York, when 189 countries and their partners adopted two of the EFA goals among the eight Millennium Development Goals (MDGs) to be achieved by 2015³.

2. Bangladesh has made progress towards increasing both primary and secondary enrollment and has already reached gender parity in both education levels. In 2005, about half of the 16.2 million students enrolled in primary school in over 80,000 primary education institutions are female, according to the 2005 Baseline Survey of PEPD II (Second Primary Education Development Program). This is also confirmed by the 2005 Household Income and Expenditure Survey (HIES) and the 2004 Demographic and Health Survey. In addition, more than 45 per cent of the children enrolled come from the poorest 40 per cent of the population (HIES- 2005) The considerable growth in enrollment between 1990 and 1995 was accompanied by an unprecedented growth of non government primary schools from 9,500 to about 25,000 schools.

The policy note has two objectives:

- **Take stock of where Bangladesh stands presently in terms of achieving the EFA goals.**
- **Provide policy recommendations that could help Bangladesh meet the EFA goals by 2015.**

Government EFA Strategy

3. The Government of Bangladesh (GoB) has been instrumental in the progress made over the past decade by recognizing primary education as a critical sector for investment to reduce poverty. In particular, the Poverty Reduction Strategy Paper (2005) highlights the pressing need to narrow the gap in quality schooling between poor and rich. A National Plan of Action for Education for All (2002-2015) embraces all the EFA goals of making education compulsory, accessible and inclusive. Furthermore, the Directorate of Primary Education (DPE), which is the implementing agency of the Ministry of Primary and Mass Education (MoPME), began implementing, in May 2004, the PEDP II, which aims at improving the quality of primary education, enhancing access to schooling, and ameliorating the overall management and oversight of the provision of formal primary education (cf. Box 1 for key policy reforms). Supported by eleven development partners including the International Development Association (IDA) with the Asian Development Bank (ADB) as the lead development partner, PEDP II represents a major step towards operationalizing the Government’s EFA and poverty reduction agenda. Prior to this program, PEDP I was implemented. With a total investment of US\$741.7 million of which half

³ The EFA goals aims at: (i) ensuring universal primary education for all children by 2015; (ii) eliminating gender disparities in primary and secondary education by 2005, and achieving gender equity in education by 2015; (iii) improving early childhood care and education; (iv) ensuring equitable access to “life skills” programs; (v) achieving a 50 percent increase in adult literacy by 2015 especially for women, and (vi) improving all aspects of the quality of education.

was contributed by the development partners, PEDP I had three main components: 1) improve school quality and system efficiency; 2) strengthen institutional capacity and management and 3) increase equitable access to quality education.

Box 1: Policy Reforms of PEDP II

Some of the key policy reforms under the program are:

- (i) Provide quality education and equitable access to include the Indigenous Remote, Special needs and Poorest student groups.
- (ii) Improve governance through establishment of minimum quality standards, monitoring of education systems performance and establishment of transparent financial and procurement management systems.
- (iii) Create a primary education cadre and implement a human resource development strategy, fill up vacant positions at all levels and sanction posts created under PEDP I and PEDP II.
- (iv) Institutional assessments and restructuring of key institutions including the NCTB and the autonomy of NAPE, devolution of authority to schools, Upazillas and district levels.
- (v) Strengthen the teachers' corps by upgrading their qualification, professional development and pay structures based on merit and incentives and opportunities for promotions.
- (vi) Curriculum reforms and textbook reforms and a national assessment to gauge the standards and quality of education provided.

The GoB is also supporting other programs such as the Reaching Out-of-School Children (ROSC) project^{4 5}. Beside the formal education provided, to a large extent, by the Government, Bangladesh has a rich history of non-formal education and basic literacy program for adults that are largely provided by the NGOs.

4. Despite considerable progress in the last decade, primary education sector still faces a number of serious challenges that need to be tackled to put Bangladesh on the path towards an efficient and sustainable education system that produces skills and generate high returns to those skills. More specifically, systemic issues such as the low quality of

the teaching force, weak management and accountability mechanisms, poor quality of the curriculum and textbook production, shortage of staff at all levels, inadequate physical infrastructure and inappropriate financing of primary education expenditures, are all adversely affecting the quality of primary education.

5. The objectives of this policy note are twofold: first, take stock of where Bangladesh stands presently in terms of achieving the EFA goals and; second, provide policy recommendations that, if implemented effectively, could help Bangladesh meet the EFA goals by 2015. Among the six EFA goals mentioned above, the study will focus mainly on: (i) universal primary enrollment for all children; (ii) universal primary completion; (iii) gender parity in enrollment; (iv) adult literacy and, (v) quality of education. These areas are not only the most

⁴ ROSC aims at improving access and the quality of education for out of school children from the most disadvantaged section of the population in 60 Upazilas through demand and supply side interventions targeting 500,000 beneficiaries

⁵ The Hard to Reach Children Project supported by UNICEF focuses on the urban working children in six Metropolitan areas targeting 250,000 children and the non-formal education supported by the European Commission in fifty districts. These programs are being implemented through NGOs.

critical, but they can be more meaningfully analyzed with reasonably reliable information from various sources.

Data, Methodology and Limitations

6. Data. The study will assess the progress made in these areas using the existing data sources: Household Income and Expenditure Surveys (HIES 2000 & 2005), the Baseline Survey of PEDP II (2005), Demographic and Health Surveys (DHS 2000 & 2004) and administrative data from MoPME. HIES and DHS are independently conducted household surveys which are nationally representative. The baseline survey of PEDP II is the Government’s most recent school survey which covers information on all types of schools except NGO schools, Kindergarten schools and schools run by other organizations.

7. Methodology and Limitations. The two sets of household surveys (HIES and DHS) are mainly used to provide weighted statistics on education indicators such as enrollment rate, completion rate and literacy rate. They contain no information about school characteristics (such as class size, school management or teacher time on task) or student achievement. The survey provides no information on urban community characteristics or children’s learning environment. HIES 2005 is used to estimate an econometric model of educational attainment, a Tobit model since some children never enroll and many enrolled students did not complete primary school at the time of the survey⁶. Information on household education spending is missing for many households and it is subject to measurement error. For these reasons, the model is limited to few key variables potentially correlated with grade attainment.

Bangladesh Development Context

8. Bangladesh has achieved relatively strong economic performance in the past decade, with GDP growth averaging more than 5 per cent a year during the 1990s and real GDP growing by nearly 52 per cent over the same period. Public spending has continued to give priority to health and education sectors. Total spending on social sectors is a little under 5 per cent of GDP. Some of Bangladesh’s health and education indicators are significantly better than those found in other South Asian countries. In fact, while India and Pakistan have recorded a gross enrollment rate (GER) of 75.2 and 70.5 respectively, in the early 2000s, Bangladesh had achieved a GER of 86.1%. Similarly Bangladesh recorded a net enrollment rate of 62.9% compared to 54.8% and 50.5% respectively for India and Pakistan during the same period. (Table 1). More significantly, Bangladesh has closed the gender gap in both primary and secondary education enrollments.

Table 1: Cross Country Comparison of Primary Enrollment Rate

	GER			NER		
	Boys	Girls	All	Boys	Girls	All
Bangladesh	84.6	87.7	86.1	61.9	63.9	62.9
India	78.9	70.9	75.2	57.7	51.6	54.8
Pakistan	80.1	60.3	70.5	56.3	44.4	50.5
Sri Lanka	109.0	101.6	105.3	78.5	75.5	77.0

⁶ A tobit model is a censored regression model in which the dependent variable takes a range of values, starting from zero for children who never attend school and a strictly positive value for children who are still in school and haven’t completed yet primary education.

Sources: *Bangladesh Household income and Expenditure Survey 2000; Bhutan, BLSS, 2003.*
India - Government of India National Sample Survey: 55th Round July 1999 - June 2000
Pakistan Integrated Household Survey 2001/2002; Sri Lanka Integrated Survey 1999 - 2000.
 Note: *Primary School Age is 6-10 for all countries.*

9. **Bangladesh seems to be on track to achieve the health related MDG goals by 2015 (MDG report, Attaining The Millenium Development Goal in Bangladesh, 2005).** Compared to its neighbors (with Sri Lanka being an outlier on most social indicators except child malnutrition), Bangladesh is clearly doing better than India, Pakistan and Nepal in the area of infant mortality rate and under five mortality rate (cf. Table 2). Life expectancy at birth is relatively similar across Pakistan, Bangladesh, India and Nepal. Bangladesh seems to be doing better in maternal mortality relative to all South Asia countries except Sri Lanka. However, child malnutrition is one of the few indicators in which Bangladesh is slightly worse off compared to its neighbors.

Table 2: Health Indicators in South Asia

	Infant Mortality	U5MR	Malnutrition	Life Expectancy	Maternal Mortality
Bangladesh	56	73	48	63	380
India	62	90	47	63	540
Pakistan	80	101	38	65	500
Sri Lanka	12	19	33	74	92
Nepal	59	83		62	740

Source: World Development Indicators, 2006.

Note: U5MR corresponds to Under-five Mortality Rate

Information on U5MR and child malnutrition is respectively in 2002 and 2001.

10. **The policy note is organized as follows.** Chapter 1 describes the provision of primary education in Bangladesh along with the management structure of the system and reviews the financing of primary education. It also examines the distributional patterns of public expenditures in primary education across different welfare groups and the benefit incidence of the primary stipend program. The next three chapters assess the progress made since 2000 in terms of primary enrollment, literacy rate and completion rate by analyzing the gender, poverty and geographical dimensions of the disparities in these educational outcomes. Chapter 4 outlines an analytical framework of the determinants of education attainment to identify factors that induce parents to send and keep their children in school. Chapter 5 discusses the learning outcomes of primary school students in Bangladesh. Some policy recommendations are then suggested to help education policymakers in their strategic planning and policy decision making process to achieve the EFA goals.

CHAPTER I ; PROVISION AND FINANCING OF PRIMARY EDUCATION IN BANGLADESH

This chapter describes the management structure of primary education, provision and financing of education; and the major role played by the Government in financing the sub-sector. It also presents an analysis of the distributional patterns of public spending in primary education.

Section I: Management and Provision of Primary Education in Bangladesh

Primary education is provided mainly by the Government, the private sector and NGOs but it remains essentially publicly financed. About 47% of schools are Government Primary Schools (GPS) accommodating 58% of total enrollment. Registered Non Government Primary Schools (RNGPS) represent 25% of primary schools; NGOs 7% and the rest are religious school (Ebtedayee Madrasahs), non registered schools and other types of primary level institutions. Most of these institutions, including the private providers, are subsidized by the Government.

11. **The primary education system comes under the purview of the Ministry of Primary and Mass Education (MOPME) which is responsible for overall policy direction with the Directorate of Primary Education (DPE)**

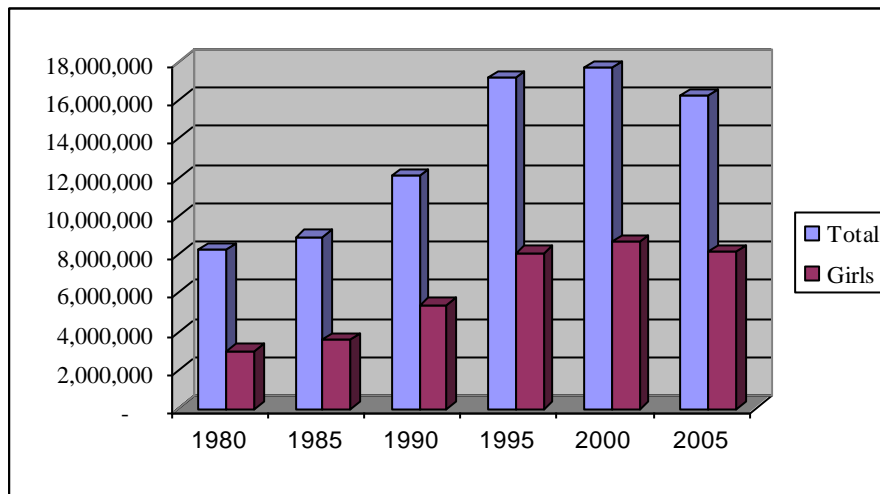
below it responsible for primary education management and administration. The administrative levels consist of division, district, upazilla and the school level. Divisions manage the registration process of non-government schools, but have few other direct responsibilities for schools. The district primary education office is responsible for managing teacher personnel (new appointments, posting, etc.) and textbook distribution to upazilas. The upazila education office provides support to Government Primary Schools (GPS) and Registered Non Government Primary Schools (RNGPS). Its management responsibilities include ensuring that teacher salaries are paid every month, inspecting schools and distributing textbooks (cf. Annex 1). The management of Ebtedayee Madrasahs – religious primary schools- is different. The district education office, responsible for secondary education, supports Ebtedayee Madrasahs under the Ministry of Education (MoE).

- **GoB provides free primary education and also heavily subsidizes private providers**
- **11 types of schools provide primary education**
- **Bangladesh has witnessed a significant increase in primary enrollment in the 1990s.**
- **36 percent of teachers are female.**

12. **Primary enrollment appears to have steadily increased in Bangladesh since the early 1980s.** In the absence of primary school age population estimates – especially in the 1980s and 1990s, and assuming that the administrative enrollment figures are close to the true number of students enrolled, the study looks at the trend in primary enrollment over the last two decades. According to some Government estimates, the number of students enrolled in primary school has increased from about 8.2 million in 1980 to almost 9 million in 1985, which corresponds to an annual growth rate of 2 per cent (cf. Figure 1). With the rapid expansion of private schools in the early 1990, the number of children enrolled in primary school exceeded 12 million raising the annual growth rate to 7 per cent over the period 1985-90. The trend was sustained in the following five years increasing the annual growth rate of enrollment to 8 per cent from 1990 to

1995 before it declined slightly after 2000. This is partly a result of the decline in the primary school age population between 2000 and 2005: the number of children 6-12 dropped by about 600,000. On the other hand, girls' enrollment has consistently increased from 37 percent to more than 50 per cent between 1985 and 2000.

Figure 1: Trend in Primary Enrollment in Bangladesh (1980-2005)



13. **Various types of institutions currently provide education in the primary education sub-sector.** A large portion of primary education is still provided by the Government. In 2005, about 47 per cent of primary education institutions were public (Government Primary Schools or GPS, cf. Table 3). RNGPS, which are privately operated but receive public subsidy for teacher salaries- represented about one fourth of the schools in Bangladesh. Other non-government schools have witnessed an unprecedented growth in the mid 90s, expanding from about 9,500 schools in 1990 to almost 25,000 in 1995, viz 160 per cent growth rate. From 1995 to 2005, this rapid expansion was sustained to bring the total number of non government schools close to 42,725. In addition to GPS and RNGP schools, the other types of primary education institutions include non-registered non-government primary schools (NRNGPS), experimental schools attached to Primary Teacher Institutes (PTI), Ebtedayee Madrasahs, kindergarten schools, NGO schools, community schools, primary sections of high school Madrasahs and primary sections of high schools. Most primary education institutions offer a five year curriculum with children officially entering the system at age 6 plus.

Table 3: Number of Primary Education Institutions, Teachers and Students Enrolled in Bangladesh (2005)

Type of School	Number of Schools		Enrolment			No. of Teacher			Student Per Teacher
	Number	Share	Girls	Total	Share of Total Students	Total	Female	Share Female	
	('000)	(%)	(Million)	(Million)	(%)	('000)	('000)	(%)	
Govt. Primary School	37.7	46.9	4.8	9.5	58.4	162.1	71.7	44.3	58.5
Regd. NGPS	19.7	24.5	1.8	3.6	22	76.6	22.8	29.8	46.7
Non-regd. NGPS	0.9	1.2	0.1	0.2	1	3.5	2.2	63.7	45.7
Experimental	0.1	0.1	0.005	0.01	0.1	0.2	0.1	37.7	44.1
Ebtadaee Madrasa	6.8	8.4	0.4	0.8	5.2	28.3	3	10.6	30
Kindergarten	2.3	2.8	0.1	0.2	1.5	18.9	10.1	53.4	13
NGO (Complete)	0.3	0.4	0.02	0.04	0.2	1.2	0.7	60.7	32.1
Community	3	3.8	0.2	0.4	2.6	8.8	6.4	72.6	48.6
Attached to High Madrasa	8.3	10.4	0.5	1.1	7.1	32.2	2.2	6.9	35.6
Attached to High School	1.4	1.7	0.2	0.3	1.8	13.1	5.7	43.9	22.6
Total:	80.4	100	8.1	16.2	100	344.8	125	36.3	47.1

Source: Baseline Survey, 2005

Note: The PEDP II Baseline Survey did not cover schools run by NGOs – such as BRAC, Proshika and GKK. The NGO schools have a complete primary cycle of 5 years unlike the BRAC schools.

14. **Despite the pervasiveness and depth of poverty in Bangladesh and its vulnerability to natural calamities, primary school enrollment has steadily increased and students enrolled are distributed across eleven types of schools**⁷. In 2005, about 16.2 million children were estimated to be enrolled for primary education in 80,000 schools supported fully or partially by the Government (cf. PEDP II Baseline report, 4th Draft, June 2006). Enrollment in GPS is by far the largest at 58 per cent, followed by RNGPS (22 per cent) and; community schools (2.6 per cent). These institutions cover 83 per cent of total enrollment and are directly under the control of MoPME. Primary schools attached to high school represent 7 per cent of total enrollment whereas Ebtedyee Madrasahs, primary schools of high schools, NRNGPS, experimental and NGO schools provide respectively 5.2 per cent, 1.8, 1.0, 0.1 and 0.2 per cent of overall primary enrollment⁸. Girls are also at parity with boys across all types of institutions (cf. Table 3).

Box 2 : Education Service of BRAC

BRAC, a pioneer NGO is currently operating two types of non formal schools: the BRAC Primary School (BPS) and the BRAC Adolescent Primary School (BAPS). The former provides schooling to children aged 8-14. Initially, the curriculum was for three years but it is now extended to four years so as to better prepare students to mainstream into secondary schools. The BAPS schools offer primary education to adolescents. BPS and BAPS classes are usually organized in a single room with a female teacher. The average class size is about 33 students with 70 per cent of them being girls. Currently, there are more than 20,000 BPS, 6,000 BAPS and 6,000 BPS model schools currently enrolling about 1 million children. The innovative approaches to schooling developed by these NGOs and the flexibility and proximity to community members that characterize them could explain why students from these schools perform better than those from other schools (Education Watch Report, 2001). For instance, BRAC helps small local NGOs implement BPS model schools across different regions, even when they are not operating under its Education Support Program (ESP).

15. **In addition to enrolling a small portion of student population in Bangladesh, NGO schools play an important role by capturing a segment of the school age population who normally would not have attended regular schools, into a non formal education system.**

About 1.2 million children currently receive primary education in these NGOs. BRAC is the largest NGO providing education

services besides other NGOs, such as, Proshika, Gono Shahajjo Shangstha (GSS) and Dhaka Ahsania Mission (DAM) to cite a few. BRAC schools are not formally recognized as part of the formal education system (cf. Box 2 for more details).

16. **Bangladesh has a teaching force of over 344,000 of which 36 per cent constitute female teachers** (cf. PEDP II Baseline report, 4th Draft, June 2006). The average student teacher ratio is higher in GPS (59) than in RNGPS (47) and other types of school. GoB has made positive strides in developing transparent criteria for teacher recruitment. DPE centrally advertises teacher recruitment based on the requirement assessed by upazilas and districts for the GoB financed schools. Initial deployment remains a central function, while the Upazila Education Offices (UEO) and the District Primary Education Offices (DPEO) can transfer teachers based on the criteria of fulfilling two years of initial service. However, there is no systematic information on teacher qualifications, teacher needs or projections. There is also a need to study the effectiveness of the current recruitment process at the local levels, although issues of governance are anecdotal.

⁷ Poverty is still pervasive in Bangladesh in spite of the fact that poverty incidence between 2000 and 2005 has declined from 49% to 40% according to recent estimates by the Bangladesh Bureau of Statistics.

⁸ Note that these NGO schools do not include BRAC schools that are not formally recognized by the Government.

17. Efforts are being made at regularizing services of all teachers hired under various development projects and policy instituted where all new teachers hired would be financed under the revenue budget.

18. **The National Curriculum and Textbook Board (NCTB), responsible for the development of primary curriculum and the printing of textbooks is the largest publisher in the world.** Besides being the largest provider of primary education, the Government of Bangladesh provides stipends to poor boys and girls and free textbooks to all schools, including those run by the NGOs. Although the NCTB was bi-furcated into a Primary and Secondary Wing, it continues to face a number of constraints; (a) there is no permanent staff and the entire staff is seconded with secondary and college teachers who have no pedagogical experience in primary education, (b) primary school teacher cannot be seconded since NCTB functions under the Ministry of Education and; (d) severely constraint by the lack of equipment. Editing of new books is also commissioned to individuals or teams and sometimes through competition; the writers are usually professors or secondary school teachers. (cf. Text Book Review Consultancy, PEDP II, May31, 2007, Bengt. L).The review also notes problems such as low quality printing, paper and short delivery time. The delivery is taken by the district authorities and it is unclear whether paper “samples “are available for cross checking and if deliveries are ever rejected based on sample check. The lack of a systematic inventory and stock taking also delays printing. Currently, estimates are provided by schools.

19. **Devolution of authority to the districts, upazilas and schools has been envisaged as a key to improving planning, management and better accountability in the management of education outcomes.** Under PEDP II, the school level improvement plans and the upazila education plans are seen as key in achieving these. The lack of a proper financing mechanism and capacity continue to be major constraints in implementing this aspect of the program.

Section II: Financing of Primary Education in Bangladesh

2.1. Historical Trends in Primary Education Financing

20. **For more than two decades, the GoB has played the pre-eminent role of a financier and service provider in the primary education sector.** The GoB’s role in financing the education sector has been instrumental in expanding primary education over the last decades. In addition to direct financing, the Government has introduced demand side interventions such as stipend and fee waiver programs, put in place incentives for the private sector to provide education services and recently introduced community based programs for *hard-to-reach* out of

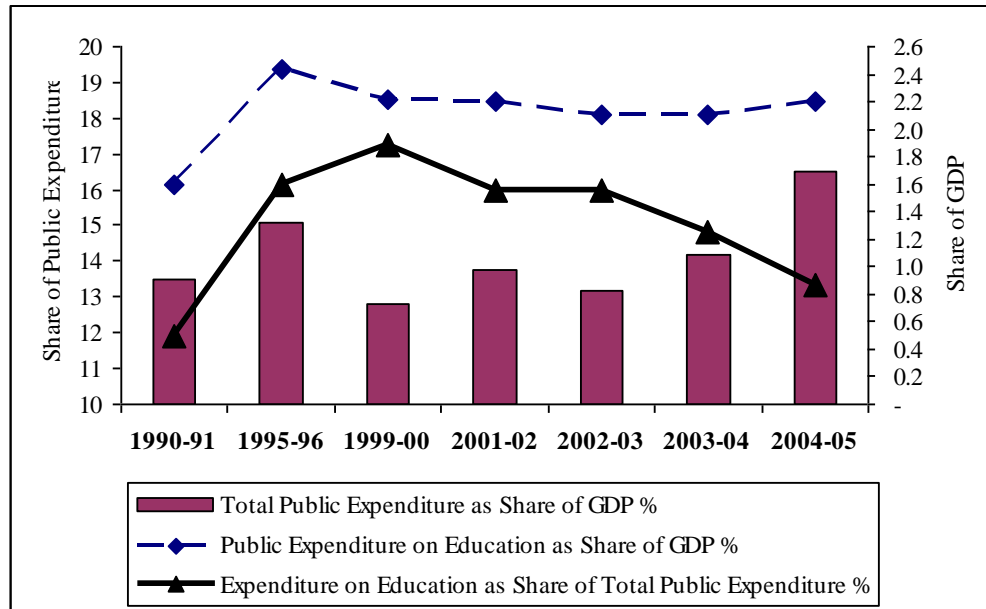
- **Education expenditures increased from 1.6 per cent of total GDP in 1990 to over 2.4 per cent in 1995-96 (cf. Graph 1). Since 1999, the share of education in GDP has remained stable at 2.2 per cent.**
- **The share of GDP devoted to the education in Bangladesh is low compared to developing countries and within the region.**

school children, among other programs. The Bangladesh Public Expenditure Review (2000) identified three key public policies that underpinned Bangladesh’s relative success in the education sector: (i) sustained injection of public resources; (ii) effective partnership with the private sector for service delivery; and (iii)

provision of subsidies to influence the demand for education.

21. **Public policy has laid emphasis on the education sector since the country signed the EFA agreement in the early 90s.** Education expenditures increased significantly from 1.6 per cent of total GDP in 1990 to over 2.4 per cent in 1995-96 (cf. Graph 1). The share of education in GDP was quite stable at 2.1 to 2.2 per cent since 1999. Public education expenditure as a share of total government spending increased from about 12 per cent in 1990-91 to 16 per cent in 1999-00 and has remained around 15 per cent. However, in 2004-05, possibly due to delays in implementing the PEDP II, the sector experienced a decline in budget allocation bringing down the share to 12 per cent of total budget allocation before it went back to the steady share of 15%.

Figure 2: Public Expenditure on Education as Share of Total Public Expenditure and GDP

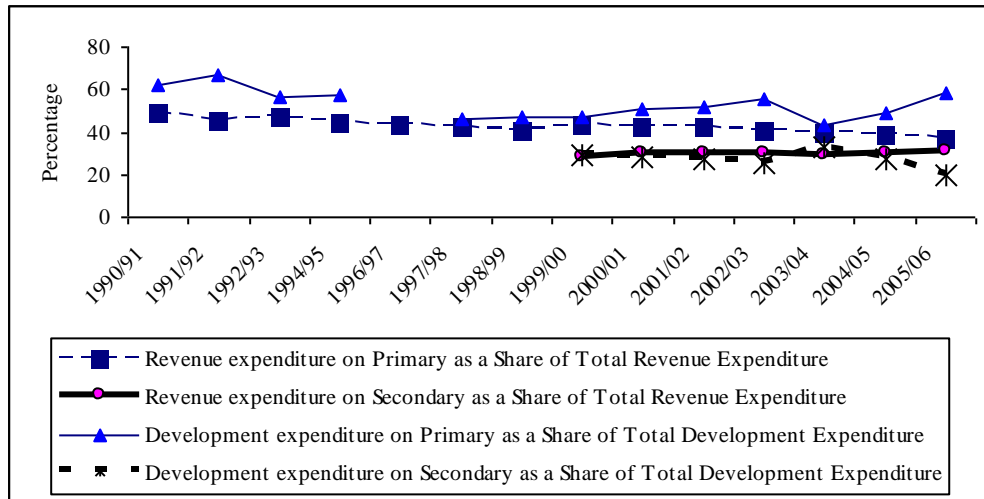


Source: Al Samarrai, 2007

22. **The growth in primary school enrollment stimulated by Government programs and the subsequent increase in primary completion rate have fueled the demand for post-primary education.** As a result, a shift of resource allocation from primary to secondary and higher secondary has been observed in the recent years. For instance, the share of primary education in the total revenue budget has decreased from 49 per cent to about 39 per cent between 1990-91 and 1999-2000 whereas the share of secondary and higher secondary education has substantially increased from 36 per cent to 48 per cent in the same period (cf. Figure 3). The latter share became 49% in 2005-06 if Madrashes are accounted for.

23. **Notwithstanding the added pressure on the education system, primary education remains today the single largest recipient of the development budget within the education sector.** In 2005-06, the primary sub-sector received about 62 per cent of the development budget compared to 27 per cent for secondary and higher secondary education. In 2003, the primary education sector experienced a sharp decline mainly because some large development projects were closing. But the trend was quickly reversed after 2003/04, probably because of the implementation of PEDP II.

Figure 3: Primary and Secondary Education Expenditure as Share of Revenue and Development Expenditure.



Source: Al Samarrai, 2007

24. **In Bangladesh, GP schools are receiving a higher level of spending per student than other types of school like RNGPS, community schools and independent Ebtadayee Madrasahs.** According to estimates provided by Al Samarrai (2007), expenditure per student in basic education went from Tk. 1,355 in 2001 to 1,788 in 2005 for government schools (GPS) whereas in registered non government schools (RNGPS), it went from Tk. 479 to 786 in the same period^{9,10}. In Madrasahs schools, per student spending has declined between 2001 and 2005, possibly as a result of the growth of religious schools.

2.2. Composition of Public Expenditure in Primary Education

25. **As depicted in Figure 3, there has been a declining trend in primary education revenue spending unlike the development expenditures** which experience some fluctuations but have been steadily increasing since 2003, mainly because of the substantial amount of resources mobilized under PEDP II. In 2005-06, primary education accounts for 62 per cent of development spending most likely as the number of schools (both public and non government) supported by the Government has rapidly increased in recent years.

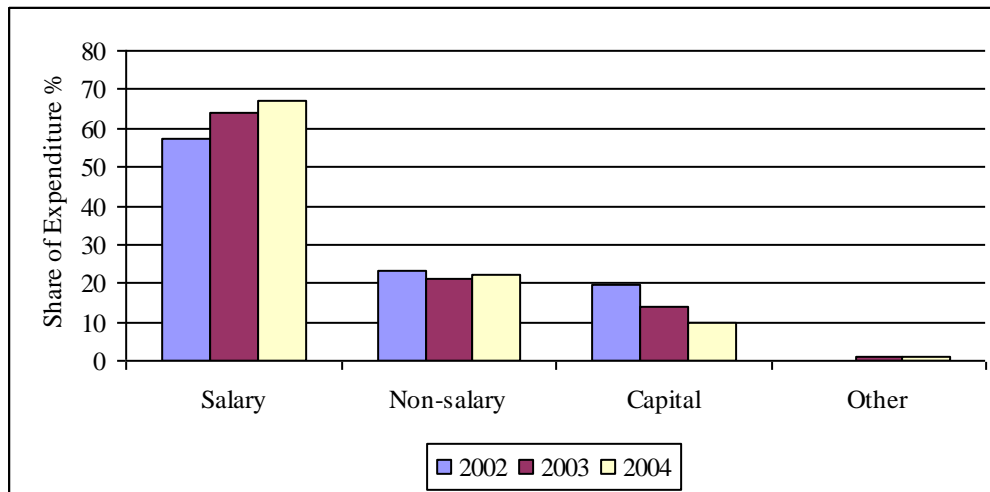
26 **Total public spending in primary education (both revenue and development expenditures) which amounts to about Tk. 28 billion is mainly composed of salaries.** As in many developing countries, teacher salaries constitute, in Bangladesh, the major component of public expenditure in education. In fact, about 98% of the revenue expenditure for primary education is salaries and allowances. This share has remained constant since 2000. The teacher salary component includes not only the salary of teachers in GP schools but also a subsidy salary for teachers in RNGP schools. However, provision of free textbooks and stipends to primary

⁹ These figures are expressed in nominal terms.

¹⁰ Primary schools benefiting from Government support cannot legally raise their own resources by charging fees to students except for examination and scholarship fees. This constraint is even more binding for RNGP schools which receive about 90% of teacher salary from the Government.

students -which are non-salary component of recurrent spending cover 20% of primary education spending, are drawn mainly from the development budget (cf. Figure 4).

Figure 4: Composition of Total Public Expenditure (Revenue and Development) in Primary Education.



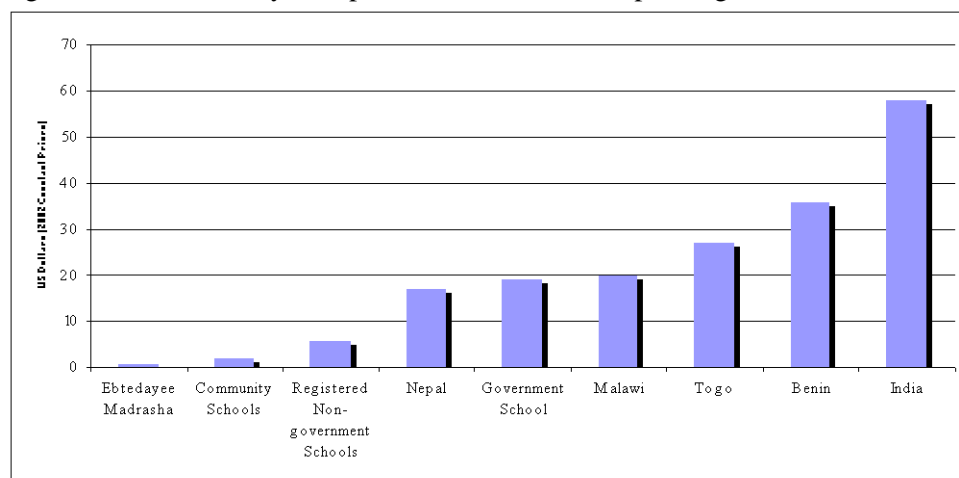
2.3. Cross Country Comparison of Primary Education Spending

27. **Although education spending is increasing, the share of GDP devoted to education in Bangladesh is 2.2%, which is lower than that of other developing countries.** For instance, the average share of GDP devoted to education was 4.5% for developing countries and 3.8% for countries in South and West Asia in 2002 (cf. UNESCO 2006, cited in Al Samarrai, 2007).

28. **Relative to other developing countries with similar per capita income, Bangladesh still spends less per student in primary education¹¹.** According to estimates provided by Al Samarrai (2007), Government primary schools in Bangladesh are achieving the same level of public funding per student than countries such as Nepal (US\$ 250) or Malawi (US\$ 160) with a GNI per capita amounting to about half that of Bangladesh (US\$ 440). India, on the other hand, provides almost three times as much spending per student as Bangladesh (cf. Figure 5).

¹¹ The amount of spending per student is one dimension of school quality as schools with higher spending per student tend to be of better quality.

Figure 5: Cross Country Comparison of Per Student Spending



Source: Al Samarrai, 2007

2.4. Equity in Public Education Spending

Public investments in the sub-sector have fueled an unprecedented expansion of primary schools and a large increase in the number of children enrolled, especially of girls and poor children. Given that these public resources were intended to reduce poverty, it is relevant to now look at the patterns of public spending in primary education across different welfare groups.

29. **Providing basic education to the poor constitutes one of the most effective tools for governments to improve their welfare status. That is why, a benefit incidence analysis is critical to understand how the primary education budget is allocated across different welfare groups.** The unit cost of providing the service is defined as total public spending of a given service divided by users of that service. Table 5 provides estimates of the per student primary education subsidy by dividing total government revenue primary expenditures by the total number of students estimated from HIES 2005¹². A Lorenz curve is also drawn to show the inequality in access to government subsidy by children from different welfare groups (Figure 6).

- **The average benefit incidence analysis shows that the poor receive a smaller share of the subsidy than their share in total population.**
- **The stipend program designed to reach the 40% poorest students was poorly targeted.**

30. Table 4 shows that the **distribution of primary education spending is weakly pro-poor in the sense that the poor receive a larger share of public subsidy in primary education than their share in total consumption expenditure and a smaller share than their corresponding population share.** In other words, public spending is less efficiently targeted

¹² Capital expenditures were excluded because we do not have data on the annual service flows resulting from that investment spending. Second, capital spending generally financed by donors is not completely available. Furthermore, we only consider public expenditures accruing to government (GP) and government subsidized (RNGP) schools given that they constitute over 70% of all primary schools and enroll about 88% of primary school students, according to the HIES 2005.

toward the poor (cf. van de Walle and Ned, 1995). For instance, the two poorest quintiles receive the same share of 17 per cent in primary education spending whereas their respective shares in total consumption are 9 and 13 per cent.

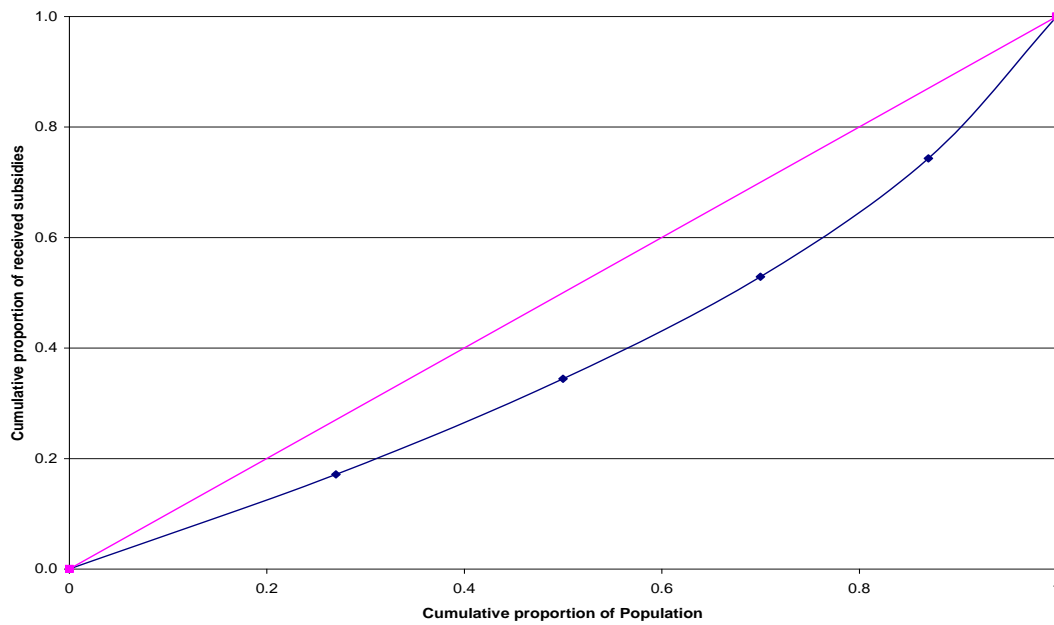
31. **The benefit incidence of public spending is regressive given that the poor are less likely to go to school.** In particular, the poorest quintile benefits less from the primary education subsidy (17 per cent) than the richest quintile who receives 26 per cent of total government primary education spending. In other words, the poor receive a smaller share in primary education subsidy than their share in the total population (20%). This can be graphically depicted using the Lorenz curve shown in Figure 6. In this curve, the cumulative proportion of subsidy received by students is plotted against the cumulative proportion of primary school aged population from different welfare groups. The degree of convexity of the curve suggests that spending on primary education is not well targeted to the poor and therefore that the benefit incidence is regressive.

Table 4: Distribution of annual public primary education subsidy, per capita consumption and population across expenditure quintiles

Consumption expenditure quintiles	Government primary education spending per student (Tk.)	Share of government primary education spending per student (%)	Share of real per capita consumption expenditure (%)	Share of Total Population (%)	Share of population 6-10 year old (%)
Poorest	800	17	9	20	27
Second	809	17	13	20	23
Third	862	18	16	20	20
Fourth	1001	21	21	20	17
Richest	1200	26	41	20	14
Total		100	100	100	100

Source: Bangladesh Household Income and Expenditure Survey, 2005.

Figure 6: Lorenz curve - Distribution of public subsidies among students from different expenditure quintiles



Source: Bangladesh Household Income and Expenditure Survey, 2005.

32. **Although benefit incidence refers to the distribution of the student subsidy, it would be incomplete if one does not account for household education spending.** Thus, in addition to the public service provided, households incur out-of pocket expenses for education service. Even though the rich spend on primary education almost ten times more than the poor, on average, they still heavily rely on public subsidy (cf. Table 5). In other words, children from rich households not only enjoy a substantial share of public spending (59%), they also benefit from privately spending more on each enrolled child compared to children of poor households.

Table 5: Distribution of annual government and household primary schooling spending across expenditure quintiles

Consumption expenditure quintiles	Total primary education spending per capita (Tk.)	Household primary education spending per capita (Tk.)	Share of Household primary education spending per capita %	Government primary education spending per capita (Tk.)	Share of Government primary education spending per capita (%)
	a = b+d	b	c = b/a	d	e = d/a
Poorest	677	82	12	594	88
Second	825	120	15	705	85
Third	993	185	19	808	81
Fourth	1245	283	23	963	77
Richest	1916	783	41	1132	59

Source: Bangladesh Household Income and Expenditure Survey, 2005.

33. **The GoB designed a primary stipend program, in 2002, to reach the 40 per cent poorest primary school students in order to “alleviate the demand-side and supply side constraints that prevent millions of children from accessing and participating fully and successfully in formal primary education”**(as specified in the 2003 Macro Plan, p.76).

Box 3 : Description of the stipend program

Despite the fact that primary education is free in Bangladesh, not all school age children happen to enter school. As a result, the Bangladesh primary school stipend program which started, in 2002, was designed to increase enrollment by providing incentives for parents to send their children to school, especially those from the lower ends of the welfare spectrum. In particular, the program was targeting the 40% poorest students attending primary school. The following criteria were used to select recipients of the stipend:

- 1) Children of widows;
- 2) Children of fishermen, cobblers, etc.;
- 3) Children of landless parents (less than 0.5 acre).

The program was initially providing Tk. 25 to each qualified child but it has evolved to provide each month Tk. 100 to the first child of the family and Tk.25 to every additional sibling. The maximum annual amount a child can receive is Tk. 1200.

The stipend program covers all eight types of schools (Government Primary Schools, Registered Non-governmental Primary Schools, Non-registered Non-Government Primary Schools, Experimental Schools attached to PTIs, Ebtedayee Madrasahs, Kindergarten Schools, NGO Schools and Community Schools).

Box 3 describes the program. As far as the targeting of the primary stipend program is concerned, it appears that the subsidy did reach some poor students in that 26.4% and 26.1% of all the beneficiaries belong to the poorest and the second poorest quintiles respectively¹³. However, a significant portion of the subsidy leaked out to children from richer households (cf. Table 6). Furthermore, among the recipients currently enrolled in primary school, about 24.5 per cent and 23.8 per cent of them belong to the poorest and the second poorest quintiles respectively whereas over 25 per cent of them come from the

40 per cent richest families. The average odds of participation computed for primary school recipients suggests that the poorest quintile would get about 24 per cent (i.e., 1.21/5) of an

¹³ In particular, among the poorest 20 per cent students, girls benefit more than boys.

increase in the size of the stipend program whereas the richest quintile would still receive 9 per cent (cf. Table 7) ^{14,15}.

Table 6: Primary school stipend program in Bangladesh

	Stipend recipients			Non Recipients
	Male	Female	All	
Lowest quintile	23.7	28.6	26.4	21.6
Second quintile	26.3	26.0	26.1	21.8
Third quintile	25.0	21.5	23.1	20.2
Fourth quintile	18.1	16.2	17.1	18.7
Highest quintile	6.9	7.7	7.3	17.7
Overall	100	100	100	100

Source: Bangladesh Household Income and Expenditure Survey, 2005.

Table 7: Average odds of participation for primary school recipients

	Participation Rate	Average Odds of Participation
Poorest quintile	0.25	1.21
Second quintile	0.24	1.18
Middle quintile	0.22	1.09
Fourth quintile	0.17	0.84
Highest quintile	0.09	0.43
All	0.20	

Source: Bangladesh Household Income and Expenditure Survey, 2005.

34. **The distribution of stipend resources by division shows that Rajshahi and Dhaka receive the largest shares at 28 percent and 26 percent of total stipend allocation respectively and their corresponding primary enrollment shares are 23.6 percent and 31.1 percent** ^{16,17}. Pro-poor targeting of the stipend appears to be the least efficient in Chittagong as only 27 per cent of the recipients belong to the 40 per cent poorest students whereas in Rajshahi, Khulna and Barisal, the corresponding shares were 64, 62 and 61 percent respectively. Dhaka lags behind at 47 percent (cf. Tables 8a & 8b). In addition, about 33 per cent of all the recipients who belong to the richest quintile live in Dhaka, suggesting therefore that more resources are leaking out to wealthy families in Dhaka division.

Table 8a: Primary School Stipend Recipient by Province and Poverty Quintile

	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Sylhet	Total
Lowest quintile	34.0	8.6	22.8	34.6	34.3	22.0	26.4

¹⁴ The average odds of participation is computed by dividing the participation rate for each quintile by the overall participation rate into the stipend program.

¹⁵ The Education Watch Report (2003/04) also identifies this targeting inefficiency from a sample of households surveyed in 10 Upazilas: over two third of the poorest children did not receive the stipend whereas 27 per cent of children from rich families were recipients.

¹⁶ Bangladesh has six administrative divisions.

¹⁷ This assumes that the HIES and the primary stipend program cover the same geographical areas.

Second quintile	27.8	19.3	24.6	27.8	30.3	24.4	26.1
Middle quintile	16.8	32.7	26.1	20.1	18.1	24.4	23.1
Fourth quintile	14.9	31.1	17.3	11.3	12.8	12.2	17.1
Highest quintile	6.6	8.3	9.2	6.2	4.4	17.1	7.3
Bangladesh	100	100	100	100	100	100	100
Total Enrolled Students	1094287	3339359	5088472	1936824	3856012	1024729	16339683

Source: Bangladesh Household Income and Expenditure Survey, 2005.

Table 8b: Primary School Stipend Recipient by Province and Poverty Quintile

	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Syllet	Total
Lowest quintile	11.6	5.5	23.3	16.6	39.7	3.4	100
Second quintile	9.6	12.4	25.3	13.5	35.5	3.8	100
Middle quintile	6.5	23.8	30.4	11.0	23.9	4.4	100
Fourth quintile	7.9	30.6	27.3	8.4	23.0	2.9	100
Highest quintile	8.2	19.1	33.8	10.8	18.5	9.6	100
Bangladesh	9.0	16.8	26.9	12.7	30.6	4.1	100
Share of Total Students	6.7	20.4	31.1	11.9	23.6	6.3	100

Source: Bangladesh Household Income and Expenditure Survey, 2005.

2.5 Marginal incidence analysis of stipend program

35. **The analysis conducted above essentially related to the average benefit incidence of public spending¹⁸. However, if average participation rates to the stipend program are a useful first approximation of the distribution of program benefits, they do not necessarily provide a reliable guide to the possible effects of a change in aggregate spending on the program.** For instance, it is possible that, as the size of a program increases, the likelihood of detecting leakage to richer households may decline, with the result that the rich may now be more likely to participate and thus gain a disproportionately large share of the marginal benefits, even though their share of average benefits is low. Alternatively, if public spending tends to reach the rich before the poor, and there is some level of saturation in the transfers appropriated by the rich, then the poor may benefit more from an increase in spending beyond existing levels (Lanjouw and Ravallion, 1999).

36. **Marginal incidence analysis asks how changes in spending on a program are likely to be distributed across different groups.** In order to assess marginal incidence, we examine the effect of expanding the overall size of the program on the probability of participation by students of different expenditure quintiles. In particular, for each expenditure quintile, we estimate a linear probability model that relates the probability of participation in the stipend program to the average participation rate in the stratum (including all quintiles). Our regression coefficients estimate the effect of a change in the overall program size in the stratum on the probability of participation for students in different quintiles; these marginal odds of participation are reported in Table 9.

¹⁸ Since we do not have disaggregated data, at the district or lower level, on public spending in primary education, we are unable to examine the marginal incidence of public spending.

Table 9: Marginal Odds of Participation to the Stipend Program

	Without Division Dummies		With Division Dummies	
	Coefficient	T-stat	Coefficient	T-stat
Poorest quintile	1.06	8.53	0.95	8.14
Second quintile	1.09	8.72	1.10	10.64
Middle quintile	1.21	8.41	1.19	10.14
Fourth quintile	0.63	4.56	0.74	6.06
Highest quintile	0.42	4.19	0.48	5.01

Note: The table reports the coefficient estimated from a linear probability model relating the probability of a student receiving the stipend to the average participation in the stratum. The estimations are weighted and we allow for intra-correlation within the primary sampling unit, i.e. the standard errors obtained are robust. Division dummies take 1 if the observation belongs to a specific region and zero otherwise.

37. **Targeting the actual stipend amount to the poorest 40 per cent students instead of increasing the size of the program is likely to be more effective at reaching the poor.** The estimates from Table 8 suggest that, at the margin, an expansion of the primary stipend program is unlikely to be pro-poor as the associated coefficients increase with welfare quintile before they drop from the 4th quintile onward. We obtained similar results even after controlling for Division effects¹⁹. Equivalently, scaling back the stipend program would likely increase participation by the poor more than the rich. The marginal odds of participation presented in Table 9 imply that the poorest quintile would receive about 19 percent (i.e., 0.95/5) of an increase in the total primary education subsidy. The estimated marginal odds of participation are best at reaching the second and middle quintiles than the poorest 20 per cent and students from the richest two quintiles are still benefit from the subsidy although less than those of the 2nd or 3rd quintile. From a policy perspective, expanding the stipend program would only benefit more students from non-poor families.

¹⁹ We use the non-self mean stipend participation rate as an instrument for the actual stratum average participation rate.

CHAPTER II : PROGRESS IN PRIMARY SCHOOL ENROLLMENT RATE SINCE 2000

This chapter documents the progress achieved by Bangladesh in enrolling children in primary school using the Baseline Survey of PEDP II and the Household Income and Expenditure Survey (HIES, 2000 & 2005).

38. **There is a considerable gap in primary enrollment rates between household based surveys such as the HIES and DHS and the recent PEDP II Baseline school survey.** According to the PEDP II Baseline report estimates, the gross and net enrollment rates have respectively increased to 97.4 per cent and 86.7 per cent in 2005. However, the HIES surveys (2000 and 2005) which constitute nationally representative household surveys, provide a substantially different picture with the NER growing from 62.9 per cent to 66.5 per cent while the GER rising by only one percentage point from 86.1 per cent to 87.5 per cent over 2000-2005 (cf. Table 10). Further, the Demographic and Health Survey (DHS) data of 1999 and 2004, although independently collected, provide similar enrollment rates as the HIES (2000 and 2005).

Table 10: Gross and Net Primary Enrollment in Bangladesh

	GER			NER		
	HIES 2000	HIES 2005	PEDP II (Baseline, 2005)	HIES 2000	HIES 2005	PEDP II (Baseline 2005)
Bangladesh	86.1	87.5	97.4	62.9	66.5	86.7
Urban	86.5	87.2		63.4	69.4	
Rural	86	87.6		62.8	65.7	

Source: Bangladesh Household Income and Expenditure Survey, 2000 & 2005; PEDP II Baseline Survey, 2005.

39. **Discrepancies in the enrollment figures between the baseline survey and the HIES survey result from multiple reasons.** Firstly, the household survey collects information on whether a child is enrolled in school at the time of the survey whereas the administrative survey is based on the number of students registered at the beginning of the school year. Therefore, the administrative survey does not account for potential dropouts or temporary withdrawal from schools. Second, data on enrollment and number of teachers in Ebtedayee Madrasahs were estimated from Bangladesh Bureau of Education Information and Statistics (BANBEIS) and may need to be taken with caution. Third, it is unclear how the population estimates from the 2001 Census were used by the baseline report to compute the enrollment rates while the HIES data are nationally representative at the Division level. Finally, there are incentives for district officials and school administrators to overstate the number of children enrolled since the allocation of public funding is often based on the number of students enrolled (cf. MDG report in Bangladesh, 2005).

40. **Bangladesh is unlikely to achieve universal primary enrollment by 2015 if the current trend in access does not improve.** Table 10 suggests that Bangladesh is not yet close to reaching universal primary enrollment. The Demographic and Health surveys (2000 and 2004) corroborate the HIES enrollment figures²⁰. GER across all socio-economic groups has slightly

²⁰ The DHS survey, like the HIES, collects information on past and current enrollment status, educational attainment and so forth.

increased between 2000 and 2005. But, the NER among children of the poorest and richest households have increased respectively by four and six percentage points. Therefore, Bangladesh is unlikely to achieve universal primary enrollment by 2015 if the current trend in access does not improve. While NER has grown by only 1.1 per cent per annum between 2000 and 2005, its annual growth rate needs to reach 5 per cent for universal enrollment to be achieved by 2015.

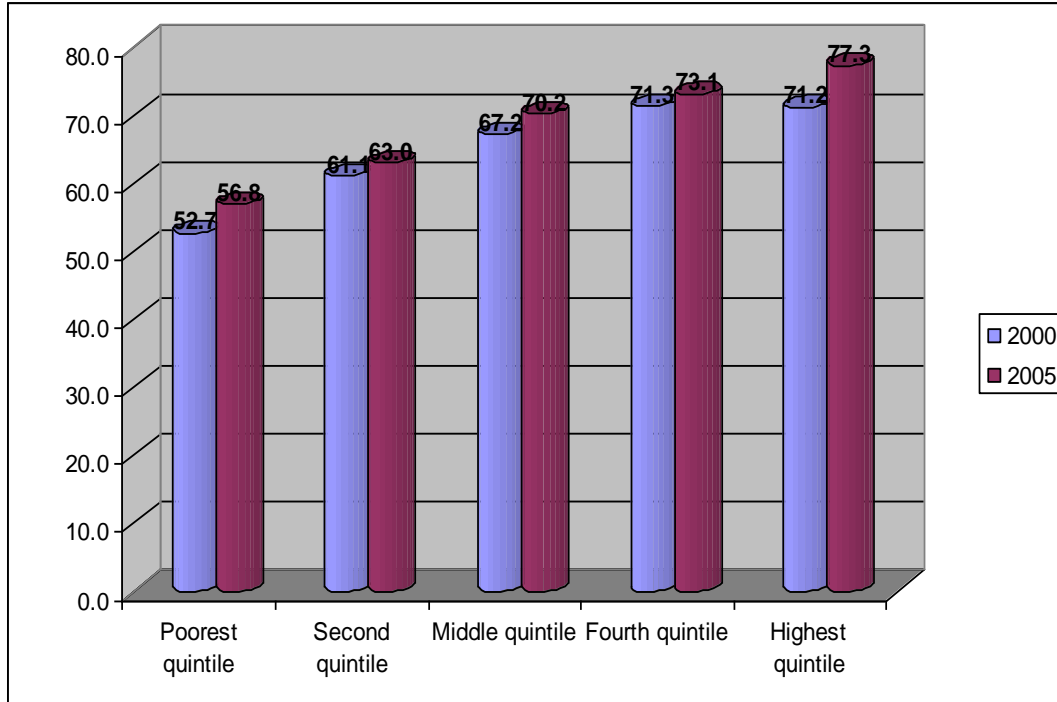
41. **One of the key EFA goals is to ensure gender parity in education by 2015.** Unlike most South Asian neighboring countries, Bangladesh has already achieved gender parity in primary and secondary education. The GER and NER for girls have increased from 87.7% and 63.9% to about 88.4% and 67.4% respectively within 2000-05. About 16.2 million students are currently enrolled in primary schools in Bangladesh, of which about 8 million are girls. Data from Directorate of Primary Education (DPE) indicate that the ratio of girls to boys enrolled in primary school has increased from 83% in 1991 to 96% in 2000 (cf. MDG report, *Attaining the Millennium Development Goals in Bangladesh*, 2005). Both HIES surveys (2000 & 2005) show that 49% of children enrolled in primary are female. Similarly, the DHS data (2000 & 2004) confirm the gender parity in primary school enrollment with a share of about 50%.

42. **In an effort to promote the education of the poor, the GoB has been engaged over the past ten years into demand side interventions** such as the Food for Education Program (FFE) and the primary stipend program. In the mid-1990s, the FFE, designed to provide grain rations to disadvantaged families conditional on their children attending school, seems to have succeeded in attracting poor children to school (Ravallion and Wodon, 2000). They estimated participation in the FFE program to have, on average, increased the probability of attending school by 20 per cent²¹.

43. **Since government interventions are not efficiently targeted towards the poorest students, the NER of children from the poorest quintiles has not increased much over time.** The HIES data show that the NER of children from the poorest quintile has increased only modestly from 52.6% in 2000 to 56.8% in 2005, reflecting an improvement relative to those of the 2nd, 3rd or 4th quintile. Figure 7 shows that, despite the relative improvement in enrolling the poor, their net enrollment rate is still very low. Therefore, for Bangladesh to strongly move towards universal primary enrollment by 2015, significant effort is required to raise the enrollment rate of the poor.

²¹ However, the FFE program exhibited a high leakage rate, with 50% of beneficiaries belonging to households above the food poverty line: it costs 1.6 Taka to transfer 1 Taka benefit. The program was discontinued in 2002 and replaced by the primary stipend education program.

Figure 7: Net Primary Enrollment Rate Across Expenditure Quintiles in Bangladesh



Source: Bangladesh Household Income and Expenditure Survey, 2000 & 2005.

CHAPTER III : PROGRESS IN ADULT LITERACY RATE SINCE 2000

Increasing adult literacy by 50 per cent is one of the EFA goals. This chapter examines the progress made, since 2000, in terms of improving the literacy skills of men and women in Bangladesh, using the HIES data (2000 & 2005).

44. **According to HIES 2005, Bangladesh is estimated to have about 41.5 million people aged 15 or more who are illiterate²².** Considering the extent of poverty and the prevailing high illiteracy rate (about 54% in 2000), the GoB gives high priority to non-formal education through basic and post-literacy programs and continuing education. The government also recognizes that the literacy and numeracy skills can help improve the incomes and welfare status of the poor.

45. **In 2001, the GoB initiated a program intended to promote post-literacy and continuing education for human development (PLCE-1).** This project has four major components related to 1) promoting a comprehensive and enhanced non-formal education system, 2) supporting post-literacy implementation, 3) establishing continuing education and 4) strengthening institutional capacity. Since its inception, about 40% of the targeted number of learners (1,391,400) in over 9,000 centers the project expected to produce has been achieved. The Government along with NGOs, voluntary organizations, community based organizations and private organizations, provide literacy and social mobilization programs.

- **Literacy and social mobilization programs have contributed to raising the national literacy rate from 45.6% to 52.7% between 2000 and 2005.**
- **Bangladesh is likely to meet the EFA target of a 50 per cent increase in adult literacy by 2015 if the annual growth rate of literacy rate exceeds 4 per cent.**

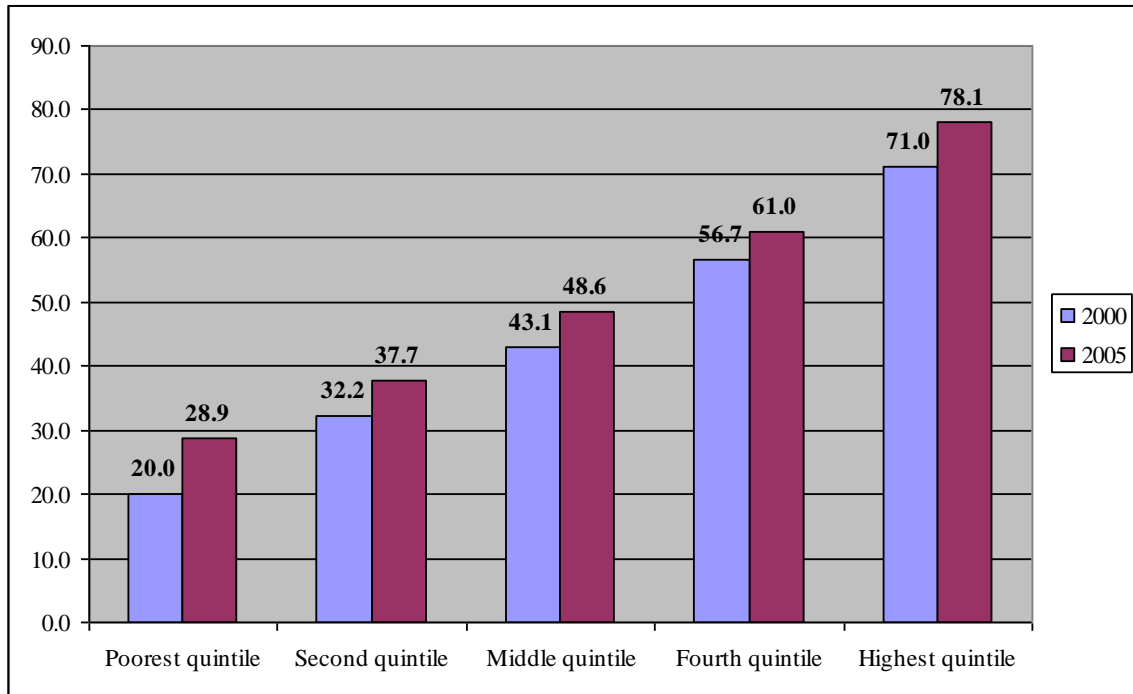
46. **The literacy and social mobilization programs are likely to have contributed to raising the national literacy rate from 45.6% to 52.7% between 2000 and 2005** (cf. HIES 2000 & 2005). In particular female literacy rate has gone up by almost 9 percentage points compared to male literacy rate which only records a 5 percentage point increase. Furthermore, the number of illiterates aged 15 to 30 has decreased from about 15 million to 11.8 million between 2000 and 2005.

47. **Rural areas appear to be still lagging behind urban areas.** This inequality in literacy may be partly explained by the extent of poverty in rural zones -the mean per capita consumption expenditure is estimated to be 1078 Taka in rural areas compared to about 1500 Taka in urban areas in 2005.

48. Furthermore, **the distribution of literacy rate across expenditure quintiles shows that the poorest households have achieved the highest gain in literacy** (about 9 per cent increase) between 2000 and 2005 among all households, followed by the richest households (cf. Figure 8). In 2005, the gender gap in literacy was lowest for the poorest quintile (7.2 percentage points) compared to 13.5 for the richest quintile although the national illiteracy rate of the poorest households is substantially high (71.2%) relative to that of the richest group (22%). Future literacy programs in Bangladesh need to be specifically targeted to the poorest families.

²² We consider as literate a person aged 15 and above who can read and write a letter, as the question was asked in the survey.

Figure 8: Literacy Rates in Bangladesh by Expenditure Quintile over 2000-05



Source: Computed from the Bangladesh Household Income and Expenditure Surveys, 2000 and 2005.

49. **Bangladesh is likely to meet the EFA target of a 50 per cent increase in adult literacy by 2015 if the annual growth rate of literacy rate remains at the current rate of 3 per cent²³.** The national literacy rate has increased by about 15.6 per cent while female literacy rate increased over 22.7 per cent during 2000-05. If the current trend in female literacy remains unchanged at 5 percent growth rate per annum, the EFA target for female literacy is likely to be achieved before 2015.

²³ Since the EFA literacy goal does not specify the time period within which that 50% increase occurs, we assume 2000 to be the base year.

CHAPTER IV : PROGRESS IN PRIMARY COMPLETION RATE SINCE 2000

This chapter will review the progress made in the primary completion rate between 2000 and 2005 before analyzing the determinants of education attainment.

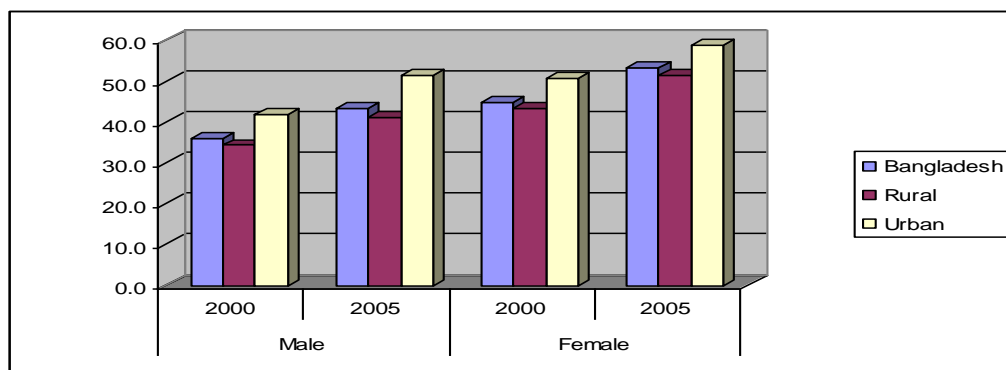
Section I: How Much Has The Primary Completion Rate Improved Since 2000?

50. According to the Education Watch report (2001), one out of five children does not enroll in primary school and one third of children enrolled ends up dropping out of school. And among those who complete the primary school cycle, one third remains non-literate or 'quasi-literate'.

51. **Since 2000, Bangladesh has made significant progress in primary completion rate²⁴. For instance, among children aged 10-15, about 48 per cent have completed grade 5 in 2005 compared to 40 per cent in 2000**, according to the HIES survey data (cf. Figure 9). All six divisions have witnessed an increase in the share of children who complete primary school. This suggests that more children are not only being enrolled in school but more importantly they tend to stay longer in school.

52. Second, it is now acknowledged that **Bangladesh has achieved gender parity in primary completion rate**. The HIES data show that more girls are now completing primary school compared to boys of the same age (cf. Figure 9). On the other hand, Metropolitan areas²⁵ are achieving lower primary completion rates than other urban centers but they are still higher than those of rural areas in 2005.

Figure 9: Primary Completion Rates of Children 10-15 in Bangladesh by Gender and Location between 2000 and 2005



Source: Computed from the Bangladesh Household Income and Expenditure Surveys, 2000 and 2005.

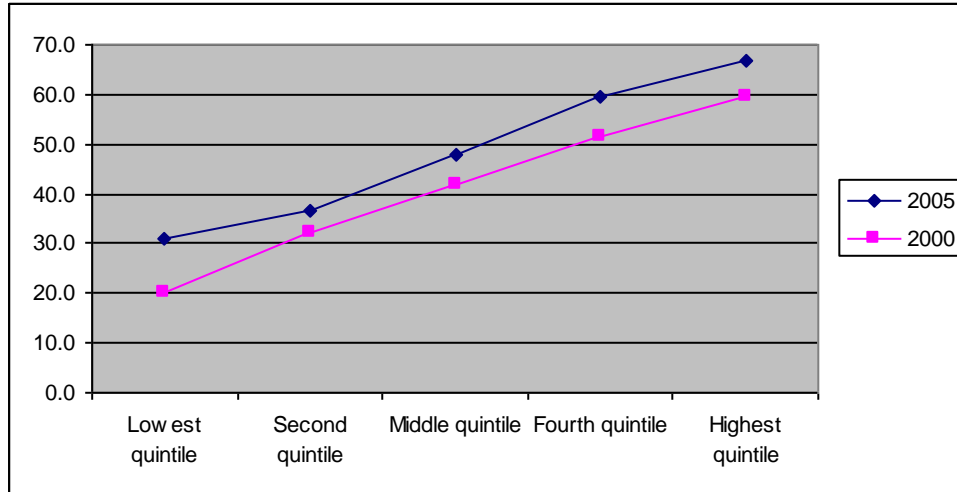
53. **The distribution of primary completion rate for children 10-15 among different socio-economic groups shows a systematic increase across all groups with the largest improvement recorded by the poorest quintile** (cf. Figure 10). In fact, the share of children 10-15 who completed primary school has gone up from 20.2 per cent to 31.2 per cent in the poorest

²⁴ We define primary completion rate as the share of all children, of a given age group, who have completed at least grade 5. Some authors refer to this as educational attainment.

²⁵ A Metropolitan area is administratively based on a group of municipalities or an equivalent entity under a division.

quintile whereas that of children from the richest quintile has only risen from 59.4 per cent to 66.6 per cent.

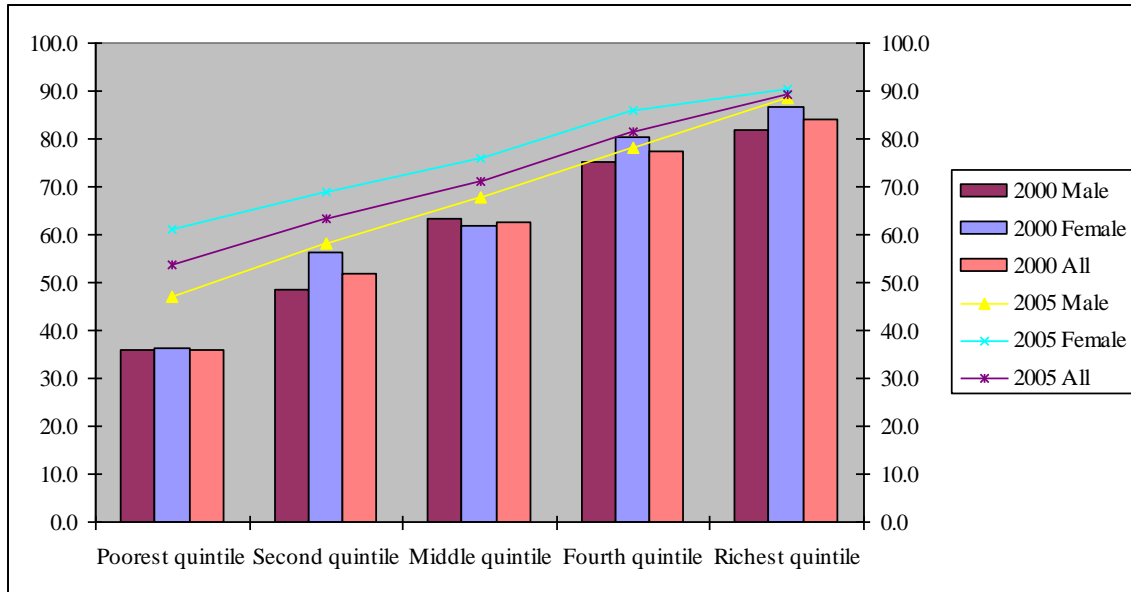
Figure 10: Primary Completion Rates of 10-15 Year Old Children in Bangladesh by Poverty Quintile between 2000 and 2005



Source: Computed from the Bangladesh Household Income and Expenditure Surveys, 2000 and 2005.

54. **The age group 15-19 provides a better picture of primary completion rate than the standard group 10-15 given that many children in Bangladesh enter school at a tardy age.** HIES data show a significant improvement in primary completion rate, from 67.4% to about 73.9% between 2000 and 2005. Figure 11 shows a relative improvement in primary completion rate among the 40 poorest although their associated rate is still very low. It is quite remarkable to notice among children aged 15-19 that, for each welfare group in 2005, girls are systematically achieving higher completion rate than boys. However, the gender gap (in favor of girls) is wider among children of the poorest quintile (14%) compared to that of the richest quintile (1.9%). This result suggests that policymakers may need to pay more attention to boys in poor households in order to raise their educational attainment.

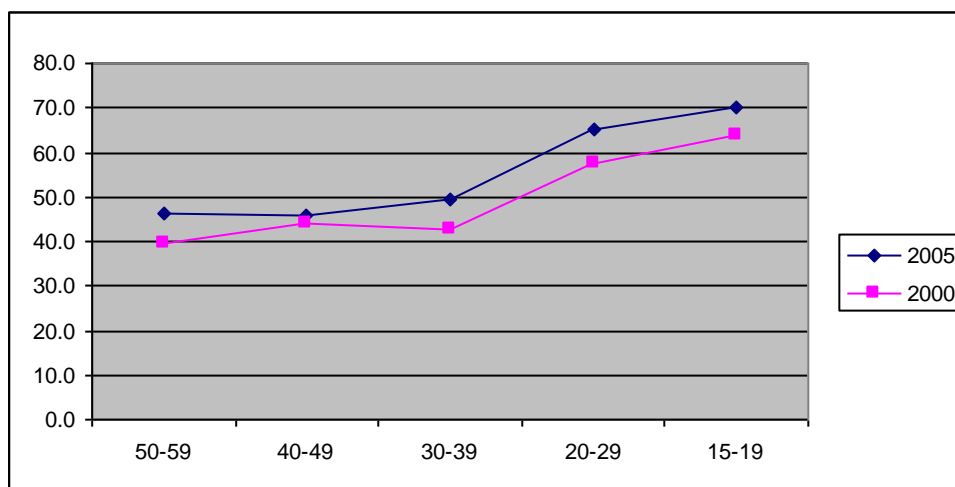
Figure 11: Primary Completion Rates of Children 15-19 in Bangladesh by Poverty Quintile and Gender between 2000 and 2005



Source: Computed from the Bangladesh Household Income and Expenditure Surveys, 2000 and 2005.

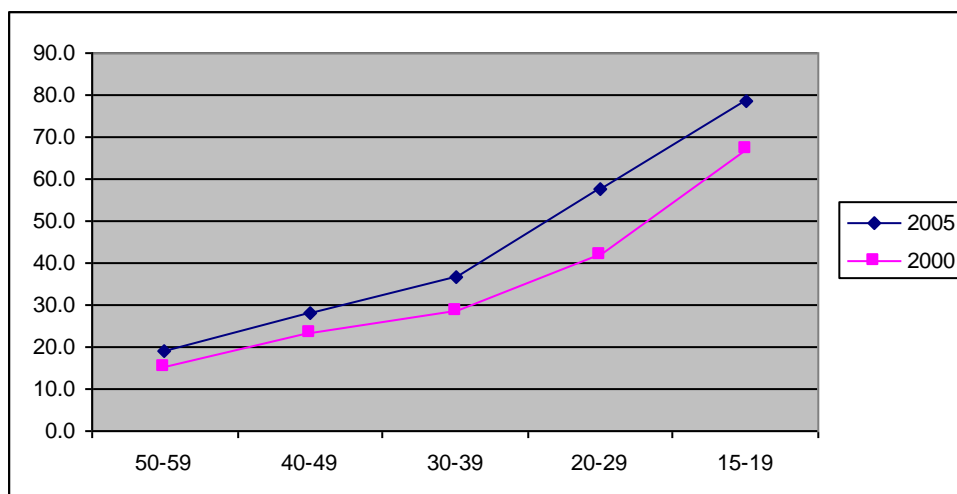
55. **Judging by the trend in primary completion across generations, one can easily notice the improvement in educational attainment across all generations for both males and females** (cf. Figures 12 & 13). Moreover, while the gender gap continues to prevail among older generations, the situation is changing for younger generations in favor of girls who are surpassing boys as far as entering and completing primary school. For instance, in 2005, about 78.4 per cent of females aged 15-19 have completed primary school compared to 70.2 per cent for males (cf. Figures 12 & 13).

Figure 12: Primary Completion Rates across Generations in Bangladesh between 2000 and 2005 (Males)



Source: Computed from the Bangladesh Household Income and Expenditure Surveys, 2000 and 2005.

Figure 13: Primary Completion Rates across Generations in Bangladesh between 2000 and 2005 (Females)



Source: Computed from the Bangladesh Household Income and Expenditure Surveys, 2000 and 2005.

Section II – Determinants of Educational Attainment in Bangladesh

56. **Understanding better why parents decide to enroll or not enroll their children in school and then implementing the appropriate policies that provide incentives for parents to invest in their children’s education, is likely to help achieve universal primary completion (cf. Paul Glewwe et al., 2005).** This section is devoted to analyzing the determinants of education attainment in Bangladesh using the Household Income and Expenditure Survey collected in 2005. Specifically, it attempts to address the following questions:

- 1) Has parental education or family literacy played an instrumental role in children’s schooling?
- 2) How do children from poor families fare relative to those of well-off households?
- 3) Do community/school locations and school shift matter in children completing primary school?

Section 2.1: Data Description

57. **Table 11 summarizes some basic statistics for children aged 6 -15.** Children from the poorest quintiles tend to achieve low educational levels. For instance, about 72% of children 6-15 who belong to the poorest quintile have not completed grade 5. In comparison, only about 43% of children from the richest quintile are in the same situation.

58. **As regards the education level of the household, about 29% of children in the sample live in households in which the head has never been to school; 17% and 10% of them have a household head who completed primary (grade 5) and secondary school (grade 10) respectively.** The data also show that about 17% of children live in households in which no member is literate (cf. Table 11).

59. **The HIES data also show that about 75% of children aged 6-15 are currently enrolled in school and within this subgroup, about 71% have not yet completed primary school. Furthermore, about 59% of children 6-15 who are not currently enrolled in school have not completed grade 5.**

60. **Almost 78% of girls and 73% of boys aged 6-15 are currently enrolled in schools.** This corroborates that Bangladesh has not only achieved gender parity in primary and secondary enrollment, but it has reversed the trend in favor of girls and thus, raising to some extent, some concerns about boys' schooling (Table 11 presents a mean education attainment that is higher for girls than boys for the age group 6-15).

Table 11: Summary Statistics for Children Aged 6-15 in Bangladesh

Dependent Variable	All			Girls			Boys		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Years of schooling	8287	3.843	2.833	4133	3.977	2.772	4154	3.710	2.886
Household Economic Status									
1st Expenditure Quintile	12348	0.239	0.427	5987	0.249	0.432	6361	0.230	0.421
2nd Expenditure Quintile	12348	0.211	0.408	5987	0.208	0.406	6361	0.213	0.410
3rd Expenditure Quintile	12348	0.198	0.399	5987	0.191	0.393	6361	0.205	0.404
4th Expenditure Quintile	12348	0.182	0.386	5987	0.181	0.385	6361	0.184	0.387
5th Expenditure Quintile	12348	0.170	0.376	5987	0.171	0.377	6361	0.169	0.374
Gender	12348	0.515	0.500						
Rural	12348	0.665	0.472	5987	0.667	0.471	6361	0.663	0.473
Household Head's Education									
Incomplete Primary	7955	0.077	0.266	3885	0.071	0.256	4070	0.083	0.275
Complete Primary	7955	0.170	0.376	3885	0.168	0.374	4070	0.172	0.378
Incomplete secondary	7955	0.227	0.419	3885	0.227	0.419	4070	0.227	0.419
Complete Secondary	7955	0.101	0.301	3885	0.101	0.302	4070	0.101	0.301
Higher Second. & Plus	7955	0.131	0.338	3885	0.142	0.349	4070	0.121	0.327
Illiterate Household	12348	0.174	0.379	5987	0.167	0.373	6361	0.180	0.385
Province									
Barisal	12348	0.086	0.280	5987	0.083	0.276	6361	0.089	0.284
Chittagong	12348	0.222	0.415	5987	0.224	0.417	6361	0.219	0.414
Dhaka	12348	0.274	0.446	5987	0.280	0.449	6361	0.267	0.443
Khulna	12348	0.130	0.336	5987	0.138	0.345	6361	0.122	0.327
Rajshahi	12348	0.229	0.420	5987	0.219	0.413	6361	0.239	0.426
Syllet	12348	0.060	0.238	5987	0.056	0.230	6361	0.064	0.245

Source: Bangladesh Household Income and Expenditure Survey 2005.

Note: Years of schooling corresponds to the number of years of education completed by the child

Rural is dummy variable that takes 1 if the location is rural and zero for urban.

Gender takes 1 for males and zero for females

Incomplete primary is a dichotomous variable that takes 1 if the head of household did not complete primary school and zero otherwise. The same applies for higher levels of education.

Illiterate household is a dummy variable taking 1 when no adult household member is literate and zero otherwise.

Province dummies where they take 1 if an observation belongs to a given province and zero otherwise.

Section 2.2: Estimation of the Determinants of Education Attainment: A Tobit Model

This section estimates a Tobit model of education attainment using only household information. For instance, it is impossible to control for school and community characteristics susceptible of influencing grade attainment.

61. **Among children 6-15 who are currently attending school, 71% have not yet completed primary school at the time of the survey.** For that reason, a tobit model is used to estimate the determinants of educational attainment. This accounts for both left and right censoring in the data. Left censoring occurs because some children never went to school and right censoring is justified by the fact that most of the children are still in school at the time of the survey.

62. **The estimations by location (Metropolitan, rural and other urban areas) shows that the magnitude of the coefficients associated with the household head's education appears systematically lower in Metropolitan areas than in rural areas.** The corresponding coefficients for other urban areas turn out to be insignificant with a negative sign, which may result from the small sample size (cf. Annex 2). The household economic conditions seem to be more homogeneous in Metropolitan areas than in rural or other urban centers as the magnitude of their associated coefficients ranges from 0.3 to 1.3 compared to the rural areas (0.2 to 1.9). Poverty seems to be an important factor in explaining the lower grade attainment of children living in Metropolitan areas. In fact, the mean per capita consumption expenditure is lower for the poorest quintile in Metropolitan areas than that of the corresponding quintile in rural areas. It is even lower for the poorest 40% households. Overall, children of the second, third, fourth and fifth quintiles are respectively 3.1%, 13.6%, 18.1% and 21.8% more likely to achieve higher grades than those from the poorest quintile. A student living in a household in which all adult members are illiterate has about 57% less chance to attain a higher grade than students whose families are literate. To account for possible omitted variable bias, the estimated model is augmented by the predicted value raised to the power of two, three and four and find that the model is not misspecified. However, the results should be interpreted with caution as it was possible to only use limited number of variables in the model. Annexes 5 and 6 provide a detailed econometric analysis accounting for the potential endogeneity of some regressors.

63. **Estimating the probability of primary completion among children aged 10-15 provides similar results as the Tobit estimations²⁶.** Further, it may be worth noting that, for lack of information, the direct and indirect cost incurred by families to send their children to school could not be accounted for. Not only was the information missing for number of households but education expenses reported by households are likely to suffer from measurement error.

64. All Tobit estimations suggest, all other things being equal, that girls tend to attain higher levels of education than boys; that children from poor families tend to withdraw sooner from school than children from well-off families; that parental education matter for the child's grade attainment and in particular the impact is significantly larger as the education level of the head of the household increases; that belonging to a household in which no adult member is literate significantly impaired a child reaching higher grades.

²⁶ These results are not shown but they are readily available.

CHAPTER V : ASSESSING LEARNING OUTCOMES IN PRIMARY EDUCATION

This chapter presents an overview of learning achievement tests administered in Bangladesh to provide a general picture of the quality of primary education and possible reasons for low learning outcomes.

65. Capacity building for national assessment under PEDP I was provided through training, regional seminars and hands on development of national assessment. However, no long term institutional capacity building was possible because of high staff turnover and the disintegration of the cell itself. Most countries in the region which participated over the course of time now have their own assessment systems.

A national assessment cell was formed in DPE under the PEDP II program but the cell is still to be fully functional with staffing of appropriate skills. The first assessment of PEDP II was conducted through a firm and the results are being finalized.

66. **In many developing countries, there is limited systematic collection of test score data -whether curriculum based or TIMMS (Trends in International Mathematics and Science Study) type tests- to assess the progress made in acquiring reading and numeracy skills in primary school.** In South Asia, compilation of such information is still in its infancy. Bangladesh is no exception. Assessing learning outcomes and understanding what determines them are all the more important that there are topical discussions over ways to ameliorate school quality given that many children are now able to enroll. Progress in the learning outcomes of primary school students has become, among policymakers and the donor community, a yardstick by which improvement in the quality of an education system is measured.

67. **What can be said about the level of skill acquired during the primary school cycle in Bangladesh?** For lack of a nationally representative sample of achievement tests administered to primary school students and followed over time to assess progress, this chapter attempts to summarize various studies that have examined the skills acquired by students of different grades. A number of studies seem to generally point to low levels of learning achievement, poor literacy and numeracy skills acquired during the primary school cycle. Furthermore, a gender gap in test scores is also observable in some studies.

Section I: Studies on Primary Student Achievement Tests in Bangladesh

68. **Nath et al. (1996) provide some evidence of low performance in Mathematics tests for rural children aged 11-12 in which only 28.7 per cent of them were able to correctly answer all 13 questions.** A study by Greany, Khandker, and Alam (1999) found that 70 per cent of students who had completed grade 5 were not competent in writing skills.

69. **A national assessment conducted in 2001 in Bangla, Mathematics, Science and Social Studies for grades 3 and 5 in Government Primary Schools (GPS) and Registered Non Government Primary**

- **Limited systematic assessment over time that provides comparable information on learning outcomes exists in Bangladesh.**
- **Various assessments reveal low performance in language and mathematics in primary school.**
- **The latest national assessment has been conducted in 2006.**

School (RNGPS) showed a mean score in Bangla of about 50 per cent and slightly below 50 per cent in Science and Social Studies and 38 per cent in Mathematics for grade 3 students. In grade 5, the mean scores in Bangla and Social Studies, Science and Mathematics were respectively 50 per cent, 43 per cent and 38 per cent. In spite of these relative good performances, only about 25 per cent of students were declared having mastered the basic skills in Bangla necessary for a successful primary school completion, with less than 10 per cent of them having acquired the basic skills in Mathematics and Social Sciences.

70. According to the Education Watch report (2001), about 16 out of 27 competencies prescribed in the primary curriculum are acquired by students at the end of primary school with only 1.6 per cent of children mastering all 27 competencies. Students from NGO run schools tend to perform better than students from other schools: about one third of children who completed the primary school cycle are non-literate or semi-literate compared to the NGO schools in which all students have acquired the basic literacy skills (Education Watch report 2002)²⁷.

71. Furthermore, a project called IDEAL (Intensive District Approach to Education for All) was initiated by UNICEF to experiment an innovative teaching approach known as Multiple Ways of Teaching Learning (MWTL). It covered grade 1 to 5 students in 29,142 schools of 213 Upazilas spread across 32 districts. An assessment by JICA of the experiment shows a mean score of 57.6% for grades 1 and 2 in IDEAL schools compared to 53.8% in non-IDEAL schools, the difference being statistically significant. For grade 3 and 5 students, the test scores were even lower with the mean score being 37.6% in IDEAL schools and 34.2% in non-IDEAL schools. Despite the overall poor achievement, the set of inputs brought into IDEAL schools have probably contributed to the difference in performance²⁸.

72. Finally, the first randomized experiment in which students are provided stipends and schools given grants is designed to determine its impact on enrolling out-of-school children and on their learning outcomes. Tests were administered to 5,036 grade 2 students in ROSC project localities and control areas²⁹. In the project areas, the mean score in both Bangla and Mathematics in ROSC schools was 58.4% compared to 55.4% in non-ROSC schools. Although the test scores appear reasonable given that these students were out-of-school, they still reflect low levels of learning achievement³⁰.

73. In spite of differences in the methodology used to administer cognitive skill tests to primary school students, most of these studies seem to acknowledge the low levels of

²⁷ A study by Appasamy, I. and Lohani, Shiva Raj (2001), has documented the role of NGOs in the education sector in Bangladesh. They are deemed to provide education services to disadvantaged groups, empower local communities to be more involved in their children's schooling, and to generally deliver quality education programs in a flexible and cost effective manner.

²⁸ The IDEAL inputs include supply of teaching-aids and sample lesson plans, teacher support kit, 7-day basic and 5-day refreshers' training on the MWTL approach, subject based training, posters in the classroom, to name a few.

²⁹ The baseline survey was carried out in February-April 2006, in 14 project Upazilas and 6 non project Upazilas. Three villages were randomly selected in each Upazila and a census of 15382 households was conducted. Eight schools were surveyed in each village and detailed information was collected of 1,500 households. Some preliminary analysis shows an increase in enrollment in grant areas (including grant plus allowance areas) compared to the control group.

³⁰ Since the ROSC experiment is new, it is still premature to estimate the impact of the program on children's learning. Follow up surveys are needed to identify the true impact.

academic performance. Because of the poor quality in education service delivery, many children complete primary school without acquiring the basic literacy and numeracy competencies. What could explain these low academic performances?

Section II: Possible Reasons for Low Levels of Student Achievement

74. **A detailed school survey combined with a household and community surveys followed over time would help identify what causes these low levels of test scores.** However, one can speculate on the potential factors associated with student achievement. Multiple factors could contribute to explain the low student achievement of primary school students in Bangladesh. They can be classified in four categories: school characteristics, home environment, child attributes and community factors.

75. **School factors include characteristics such as the student-teacher ratio, teachers' time on task, their teaching load, textbooks and other instructional materials, the length of the school year, single or multiple shift classrooms, school facilities such as library, toilets, sports and other physical infrastructures.** All these factors are potentially highly correlated with test scores. The Education Watch report (2002) attributes the low performance of students to the poor physical infrastructures of schools, the lack of remedial measures in the classroom, the memory-base teaching style and the inadequate teaching materials (including textbooks). While textbooks supplies to schools have improved in Bangladesh, their quality and production remain problematic.

76. **A recent study by Chaudhury, N. et al. (2005) has documented the extent of teacher absenteeism in public schools and how it severely hampers effective service delivery.** For instance, two rounds of visits to primary schools in 2003, have shown that 23.5% of primary school teachers were absent during at least one of the two visits. This poor quality in service delivery is reflected in the poor performance achieved in test scores.

77. **The home and community environments also play a critical role in children's skill acquisition.** Children living in poor homes, pupils whose parents or siblings have no formal education or lower education attainment or are not supportive, tend to have lower performance at school. Girls constrained by household chores are also likely to do worse in school compared to boys. Asadullah M. et al. (2006) finds, in addition to the low test scores observed, that grade 6 female student in rural Bangladesh perform significantly worse than boys, even after controlling for school/classroom factors and stipend status: on average, only 35% of the primary level Math questions were correctly answered by girls whereas 54% were for boys. Student characteristics such as the child's ability or intelligence, interaction with peers, satisfaction with teachers or the distance he/she travels to go to school are all susceptible of influencing learning achievements. Further, involvement of community members in the management of the school, in providing material or financial assistance to the school, also appears to influence learning outcomes.

CHAPTER VI : POLICY RECOMMENDATIONS FOR BANGLADESH

The previous chapters have shown the progress made by Bangladesh in terms of primary enrollment, completion rate and literacy rate and the likely impacts of different education programs implemented by the GoB along with development partners over the last decade. Progress has been slower than what would be required to achieve universal access and completion as well improved school quality. While our analysis shows that the literacy target is the only goal that is likely to be reached by 2015 if the current trends sustain, enhancing the pace of key reforms in the following areas (i) equity and efficiency in public spending; (ii) quality of schooling; and (iii) governance, could help Bangladesh meet the remaining EFA goals.³¹ A policy matrix summarizes the key issues facing the subsector and the corresponding policy recommendations (cf. Annex 7).

Section I: Better Allocation of Public Spending in Primary Education

78. Primary education had been, over the last decade, the major sub sector of the Government's investment in education but today only 36.6% of recurrent education spending is going towards financing primary education. The shift towards secondary education seems to be a natural trend given that Bangladesh has been successful in increasing primary enrollment. However this raises new challenges for the government to ensure enough investment in the primary education sector, in the light of the EFA goals. **A more efficient allocation of the nation's limited resources is necessary to support the reforms needed in the sub-sector³².** In particular, a better targeting of public spending (including the stipend program) to students from the poorest segments of the population is likely to considerably raise access and completion rates.

79. **Better targeting of the primary stipend program to the poorest students and generally a more progressive redistribution of government primary education spending towards the poorest children is likely to help Bangladesh achieve universal primary enrollment and completion.** Both the average incidence of total public spending and the marginal benefit incidence analysis of the stipend seem to point to a regressive redistribution of

- **More progressive redistribution of government primary education spending towards the poorest children.**
- **Better targeting of the stipend program.**
- **Implement MoPME's human resource development plan and fill in vacancies.**
- **Strengthen teacher development, establish efficient recruitment and deployment practices.**
- **Strengthen monitoring and evaluation.**
- **Improve the quality of textbooks produced and the transparency in their distribution.**
- **Develop, within Bangladesh education system, an incentive structure that rewards performing teachers and schools.**
- **Develop partnerships and alternative cost effective strategies to reach EFA goals**

³¹ While numerous challenges still face the primary education sector, we choose to focus on these three areas as they constitute critical areas that are likely to accelerate universal enrollment and completion in Bangladesh.

³² The share of GDP devoted to education in Bangladesh is lower than that of other developing countries. It remains low even when compared to countries in the region. But, Government revenues are unlikely to increase at a desired rate unless the trend of economic growth is sustained in the short run.

public spending. The initial goal of providing scholarships to the 40 percent of the poorest students can still be met if the leakage to rich households is redirected to meritorious students from poor families. A cost effective proxy means testing (PMT) tool could be designed and implemented to properly identify students from poor families using household characteristics that are easily verifiable and cannot be manipulated as well as community factors. The PMT instrument could also be used by other welfare programs in secondary or higher education, health or social protection.

80. **Targeting efficiently the stipend to the poorest students will also require a third party monitoring.** This will ensure that the targeting remains accurate; that there is transparency in the way the resources are allocated. For instance, by linking the money received to inputs such as the number of enrolled children, the accountability mechanisms are likely to be enhanced.

81. **The Government needs to explore strategies to ensure access to education for children in slums, under-served and metropolitan areas.** The pervasive poverty in metropolitan areas coupled with the fact that the initial stipend program did not cover these areas signals the pressing need to extend the program to students from poor families in these areas. Rather than increasing the size of the program, the GoB may be better off tailoring it to the most needy and meritorious students so as to reduce the leakage of resources to richer families. The highly mobile nature of slum dwellers has made education service providers reluctant to work in metropolitan areas. Over the last decade, no schools have been established and private providers were not encouraged to operate in these areas. However, because of the high cost of setting up new schools, alternative cost effective ways, such as the use of existing public facilities for evening classes in order to attract, for instance, working children, may be worth exploring.

Section II: Ways to Improve the Quality of Primary Schooling

82. **The low levels of student achievement observed in the primary education system (cf. Chapter V on learning outcomes) coupled with teachers' absenteeism and their relatively short time on task, are likely to reflect, to a large extent, the quality of the education provided.** As a result, many children are likely to drop or not enroll in schools. Therefore, improving the overall quality of schooling appears to be a pressing task in order to substantially raise enrollment and help more children complete primary school with the appropriate skills in reading, sciences and Mathematics.

83. **Converting double shift schools into single shift schools is likely to exacerbate the supply constraints. Instead of a single shift policy, adopting double or single shift system based on the excess or shortage in supply identified in different areas may be a more realistic approach.** Despite decades of infrastructure development, the stock of facilities for minimum conducive learning remains inadequate. The rapid expansion of enrollment has further exacerbated the situation, along with the Government's plans to move towards a single shift system of primary education.

84. **The concept of hiring local teachers coupled with opportunities for training and professional growth to increase performance and accountability seems to be a viable and cost effective strategy, especially in disadvantaged areas with limited supply of teachers.** International evidence, however, shows little impact of class size reduction on student performance with the likelihood of significantly raising the cost of hiring additional teachers³³.

³³ Hanushek E. (1992, 1996, 2002), has shown, for developed countries, that increasing school resources such as spending per student or reducing class size has little correlation with student achievement. Of 30

85. **Recruitment of competent instructors, revision of teacher training curriculum, and an effective in-service training strategy would be critical in improving the overall teacher quality.** Although efforts are being made to improve teacher training, especially in terms of improving the curriculum for Certificate- In –Education and subject based in-service training, it is severely constrained by inefficient teacher recruitment and deployment procedures, severe shortage of qualified staff at the PTIs and NAPE further undermining the ability to provide effective teacher training.

86. **An incentive structure within the education system needs to be seriously considered, if well performing teachers are to be retained in the system.** There is increasing evidence that parents tend to send and keep their children in school when they perceive improved quality in schooling, despite the direct and indirect costs associated with education. Tackling the critical issue of school quality and improving the delivery of education services require cost effective ways of spending resources to increase the relative share of non-teacher inputs and create incentives for teachers to stay in the profession, including rewarding well performing teachers. Teachers' salary is exclusively determined by their educational qualifications, training and experience/seniority rather than actual performance. Monetary incentives are thought to improve the quality of teaching. However, recent evidence of rewards to teachers based on student test scores do not seem to hold long term benefits because teachers stop putting effort as soon as the incentive is removed. Within PEDP II, it may be worth piloting different approaches to compensate better performing teachers with an incentive structure characterized by clear and transparent criteria for rewarding and retaining the best performers coupled with an efficient recruitment and deployment practices³⁴.

87. **More rigorous evaluations (such as randomized experiments) of school quality initiatives would inform policymakers about the likely impacts of various policy interventions on education outcomes.** These experiments will require technical assistance, the training of education staff and managers who can develop a culture of learning and evaluation based policy.

88. **The results and the methodology of the recent National Assessment of learning achievement are currently being reviewed.** This should provide guidance on how to improve the system so that it becomes a key tool that would impact on curriculum, monitoring and evaluation of the system and pedagogical practices³⁵. There may also be scope for improving the learning assessment.

89. **Instituting a stronger partnership with NGOs – for instance in the area of innovative and cost effective approaches for both access and quality- will be critical in**

studies in developing countries reviewed, 14 found pupil-teacher ratio to be statistically insignificant, 8 having a negative effect and other holding a positive effect on test score. A randomized experiment in Kenya shows little impact of class size reduction on test scores (cf. Glewwe P., Kremer M., Moulin S., 2006).

³⁴ Performance related pay for teachers exists in some developed countries (UK, US) and it is mainly based on student exam results. In the case of Bangladesh, an attendance component could be added to the incentive structure. For more details, read Atkinson, A. et al. (2004) "Evaluation the impact of performance-related pay for teachers in England", CMPO WP 04/113, University of Bristol; and Hanushek E. et. (2005), "Does school accountability lead to improved student performance?", Journal of Policy Analysis and Management 24 (2).

³⁵ The national learning assessment system could benefit from international successful examples such as Peru or Romania (World Bank, 2006).

reaching those children who are out of school. Some NGOs have demonstrated their ability to successfully provide quality education to the rural children and have developed innovative approaches to learning. They cover approximately 7 per cent of all primary school children often coming from the most disadvantaged groups. Similarly, community managed schools (based on need and demand from the community) with quality enhancing support from Government/NGOs may help Bangladesh enroll children who may otherwise never go to school.

All the above recommendations to improve the quality of primary schooling, if implemented effectively, are likely to accelerate the progress towards universal primary enrollment. However, they are unlikely to have lasting effects if institutional reforms are not in place to support them.

Section III: Improving Governance in the Bangladesh Educational System

90. **Key institutional reforms include devolution of authority and strengthening the management and administrative capacities at the schools, line Divisions of DPE, Primary Teacher Institutes (PTIs) and the National Academy for Primary Education (NAPE). In order for this to happen, it is imperative that all existing vacancies be filled.** The Bangladesh education system is characterized by weak management, compounded by high staff turnover and a lack of a dedicated education cadre with appropriate technical skills (cf. PEDP II project documents). The education system is still highly centralized and inhibits district, upazila and school level initiatives to plan and manage resources to provide quality education. This is further exacerbated by an ineffective system of accountability: that of teachers to students and parents/guardians; that of teachers to head teachers; that of head teachers to school management committees and district supervisors.

91. **The NCTB would benefit from hiring staff with relevant competencies.** The NCTB is responsible for developing curriculum and publishing textbooks. NCTB is one of the largest textbook publishers in the world and is responsible for providing 80 million textbooks annually at primary and secondary levels. While textbooks supplies to schools have improved, their quality and production continue to be problematic. NCTB is further constrained by a lack of permanent staff with appropriate skills and lack of equipment to effectively carry out their functions.

92. **Improving the quality of textbooks and supplementary materials as well as methods of procurement and distribution of textbooks is likely to help ameliorate the overall learning environment³⁶.** Textbook production and procurement have not followed the standard practices. For instance, books that were supposed to be distributed for free wound up being for sale in markets (World Bank, 2003). The report also highlighted that corruption in procurement has resulted in poor quality of school construction. These types of governance problems contribute to the poor quality of education in Bangladesh, and undermine the considerable progress made in expanding access (cf. World Bank, 2005).

93. **Enhancing the capacity of the Monitoring and Evaluation Division under DPE, with appropriate staffing and logistic support, would be critical for sound education policy formulation and strategic planning.** A simple but credible Monitoring and Evaluation (M&E) system is useful not only as a management tool but for governance purposes. It would instill a culture of accountability within DPE and MoPME. Bangladesh lacks an effective monitoring and evaluation system that collects reliable primary school information/data. Most of the information received is self-reported and DPE lacks resources to verify the reliability of the data.

³⁶ Some supplementary reading materials have been developed.

Furthermore, the logistics provided to deal with a huge information flow is inadequate. DPE has not officially published any statistical data on primary education since 2002³⁷. The discrepancies in primary enrollment and completion rates between administrative and household based data (Baseline Survey 2005 and HIES 2005) points to the pressing need to build an M&E system that develops local capacity to collect, analyze and use school data. Creating management incentives to train staff, both at the central and local levels, on techniques to collect and use reliable information and providing staff with incentives to use and improve their technical skills, would enhance accountability and transparency in the utilization of public resources and thus improve education outcomes. To date, there is no single source of data for formal and non-formal primary education, encompassing all 11 categories of schools. This should be a core responsibility of the government. Given that capacity building process will take time, other possible alternatives could be **(i) to outsource the function of collecting and analyzing school data and publishing, on a regular basis, (ii) collaboration could be developed with the Bangladesh Bureau of Statistics (BBS) on the techniques of conducting household surveys to design school programs.** It is important, however, that there is close partnership between M& E, EMIS and the third party so that in-house capacity is developed while regular tasks are underway

94. **Developing information campaigns on the delivery of services and resources from the Central Government to local level authority and schools to empower local communities,** in the management of schools and resources for better quality of education for their children, would be instrumental in improving the quality of schooling and learning outcomes³⁸.

95. **The time on task of teachers in Bangladesh which has fallen short of the minimum standards required to provide effective student learning** is further exacerbated by teacher absenteeism (cf. Chaudhury et al., 2006)³⁹. These authors find that, even the teachers who were present during the unannounced visits, were not actually teaching⁴⁰. Teachers are more concerned about private tutoring than teaching at school. Reducing teacher absenteeism and making public schools accountable to students and the community is not an easy task. As the *World Development Report 2004* points out, it requires broad-ranging institutional reform, including, among other things, empowerment of communities who can hold public schools accountable for performance, devolution of administrative and financial powers to communities, greater autonomy to schools, involvement of parents in the school management, and ensuring the motivation of teachers.

96. **Under the planned decentralization process in Bangladesh, the empowerment of local communities would entail strengthening the capacities of the School Management Committees (SMCs) and the local level authorities in planning, management and utilization of resources.** This is significant, particularly in the light of the School Level Improvement Plans (SLIPs) being piloted under the PEDP II program and expected to scale up in all schools. Above all, the success of the decentralization process will depend greatly on ensuring that systematic

³⁷ The Bangladesh Bureau of Education and Information Statistics (BANBEIS) -the Government official source of post primary education information- provides primary education data on a regular basis, a function that was also outsourced until DPE established its own EMIS.

³⁸ A number of randomized trials are ongoing in India and they provide evidence that information to local citizens has a strong impact on education outcomes (cf. Priyanka Pandey, 2004; 2005).

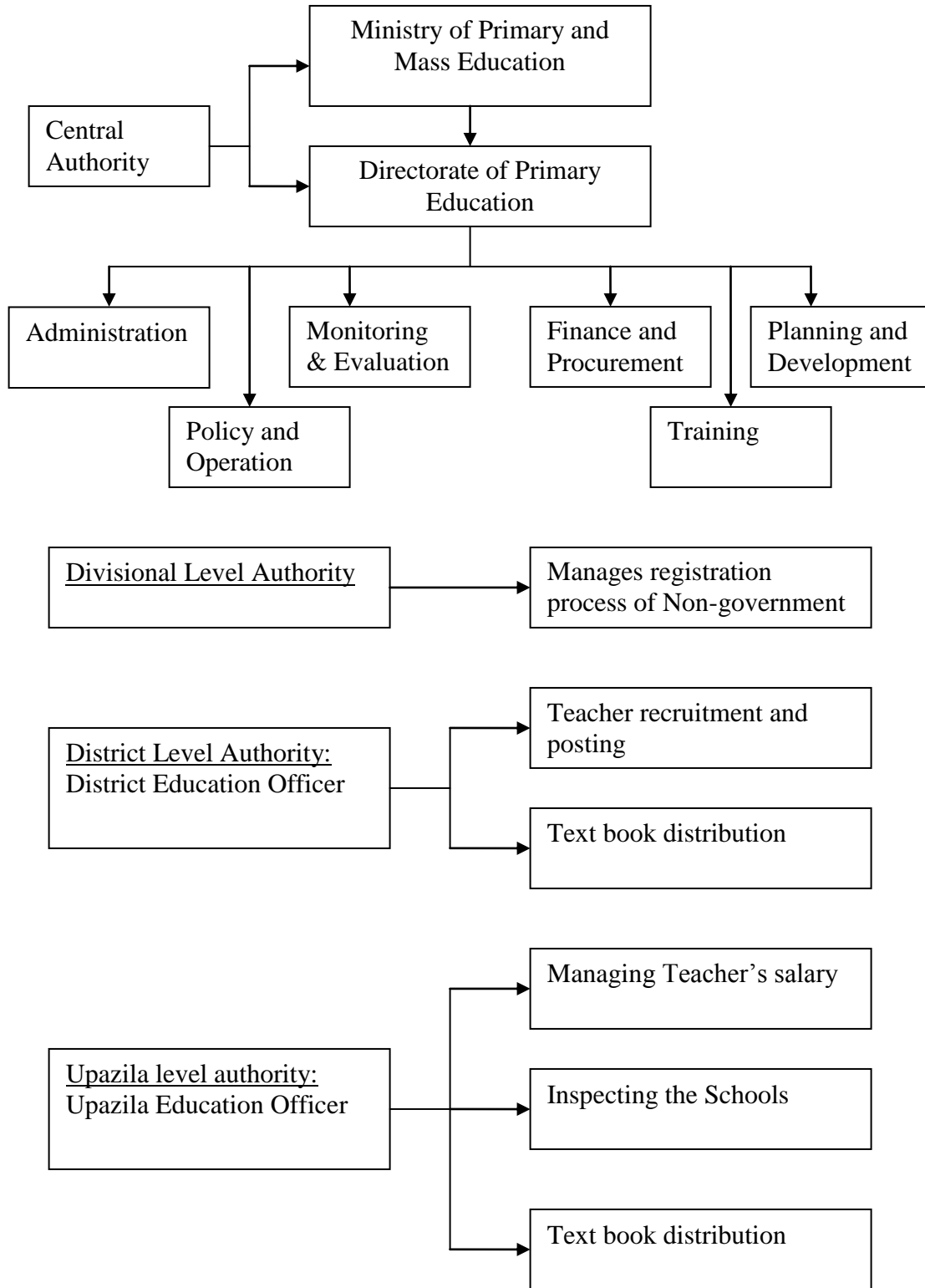
³⁹ While the international average number of hours of instruction is set at 910 hours per year, Bangladesh is well below that international standard at 768 hours, partly as a result of numerous strikes paralyzing the education system.

⁴⁰ In the case of Bangladesh, the two main reasons given for primary school teacher absence was “away on official school related duties” (49%), and “on official-leave” (33%). For further details, read the paper by Chaudhury et al., Roll Call: Teacher Absence in Bangladesh, 2005.

transfer of funds takes place and personnel at the local levels receive relevant training on financial management. These reforms will have to be accompanied by proper monitoring and evaluation mechanisms to ensure accountability and transparency.

ANNEXES

Annex 1: Management Structure of Primary Education in Bangladesh



Annex 2: Tobit estimations of Grade Attainment for Children Aged 6-15 in Bangladesh

	All		Metro		Rural		Other Urban	
	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Household Economic Status								
2nd Expenditure Quintile	0.25	1.39	0.34	0.94	0.17	0.79	0.51	0.53
3rd Expenditure Quintile	1.07	5.80	1.06	2.88	0.96	4.33	1.99	2.08
4th Expenditure Quintile	1.42	7.56	1.16	3.08	1.33	5.78	1.96	2.17
5th Expenditure Quintile	1.72	8.56	1.32	3.40	1.90	7.50	1.81	1.94
Household Head's Education								
Incomplete Primary	1.14	5.08	0.81	1.67	1.07	3.79	1.00	1.23
Complete Primary	1.48	8.12	1.31	3.46	1.65	7.48	-0.34	-0.42
Incomplete secondary	1.80	10.63	1.81	4.97	1.95	9.39	0.38	0.53
Complete Secondary	1.94	8.64	1.89	4.41	2.39	7.96	-0.30	-0.39
Higher Second. & Plus	1.74	7.92	1.81	4.45	2.14	6.68	0.27	0.39
Illiterate Household	-4.48	-21.17	-4.88	-9.55	-4.51	-18.41	-6.52	-4.87
Division								
Barisal	-0.03	-0.11	-0.51	-1.04	0.10	0.27	-0.13	
Chittagong	-0.14	-0.51	-0.54	-1.18	0.06	0.18	-1.46	-0.15
Dhaka	-0.43	-1.63	0.10	0.21	0.12	0.38		-1.87
Khulna	0.62	2.12	0.18	0.36	0.87	2.49	0.59	
Rajshahi	-0.11	-0.40	-0.60	-1.37	0.04	0.13		0.45
Gender	-0.57	-5.18	-0.40	-1.94	-0.68	-4.90	-0.44	-1.21
Rural	0.10	0.76						
Constant	2.37	7.52	2.94	5.66	2.25	6.59	3.68	3.77
Number of Observations	6463		1837		4056		570	
Pseudo-Rsquared	0.0748		0.064		0.0888		0.0405	

Note: Estimations Computed from the Bangladesh Household Income and Expenditure Survey 2005.

Annex 3: Tobit Estimations of Grade Attainment by Gender and Stipend Status

	Girls		Boys		Non Stipend		Stipend	
	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Household Economic Status								
2nd Expenditure Quintile	0.19	0.73	0.32	1.34	0.30	2.10	0.27	1.13
3rd Expenditure Quintile	1.09	3.93	1.09	4.42	0.70	4.57	0.33	1.31
4th Expenditure Quintile	1.57	5.63	1.33	5.20	0.59	3.76	0.89	3.15
5th Expenditure Quintile	1.91	6.35	1.58	5.89	1.15	6.99	1.27	3.62
Household Head's Education								
Incomplete Primary	1.04	3.01	1.22	4.17	0.87	4.63	0.15	0.48
Complete Primary	1.28	4.72	1.63	6.66	0.42	2.81	0.53	1.84
Incomplete secondary	1.47	5.71	2.10	9.36	0.67	4.80	0.17	0.66
Complete Secondary	1.51	4.53	2.33	7.68	0.93	4.96	1.00	2.85
Higher Second. & Plus	1.15	3.58	2.31	7.66	0.33	1.79	0.16	0.33
Illiterate Household	-4.97	-15.73	-4.02	-14.20	-1.29	-7.74	-0.91	-3.42
Division								
Barisal	0.57	1.17	-0.54	-1.30	0.77	3.02	0.40	0.69
Chittagong	0.18	0.44	-0.37	-1.05	0.55	2.44	0.61	1.10
Dhaka	0.03	0.06	-0.80	-2.31	0.11	0.50	-0.28	-0.52
Khulna	1.22	2.74	0.10	0.25	0.60	2.47	-0.10	-0.17
Rajshahi	0.65	1.55	-0.72	-2.05	0.31	1.40	0.06	0.12
Gender					0.11	1.19	-0.50	-2.86
Rural	0.16	0.77	0.06	0.34	0.01	0.05	-0.40	-1.08
Constant	2.07	4.38	2.02	4.96	0.88	3.41	2.75	4.13
Number of Observations	3183		3280		2676		501	
Pseudo-Rsquared	0.072		0.0777		0.0337		0.0539	

Note: Estimations Computed from the Bangladesh Household Income and Expenditure Survey 2005.

Annex 4: IV Estimations of Grade Attainment by Gender, Location and Stipend

	All		Rural		Urban		Girls		Boys		Non Stipend		Stipend	
	Coef.	Z-stat	Coef.	Z-stat	Coef.	Z-stat	Coef.	Z-stat	Coef.	Z-stat	Coef.	Z-stat	Coef.	Z-stat
Illiterate Household	-3.87	-3.49	-2.00	-1.78	-7.11	-2.5	-9.44	-4.99	-1.39	-0.86	-1.27	-1.17	0.37	0.2
Household Economic Status														
2nd Tercile	1.89	0.95	1.52	0.88	0.07	0.02	-7.22	-1.7	9.72	3.15	0.97	0.5	7.84	1.5
3rd Tercile	5.35	2.32	5.81	2.47	-0.74	-0.29	-7.74	-1.89	3.68	1.48	-0.97	-0.49	5.02	1.38
Household Head's Education	0.45	5.7	0.43	4.62	0.36	3.15	0.72	3.97	0.52	5.27	0.30	3.61	0.13	0.83
Gender	-0.52	-4.13	-0.66	-4.06	-0.29	-1.27					0.16	1.56	-0.63	-1.51
Rural	0.69	4.06					1.48	3.61	0.80	3.42	0.30	1.74	-0.70	-1.06
Province														
Barisal	-0.17	-0.28	0.25	0.4	-0.93	-1.36	-2.07	-1.87	0.21	0.25	0.14	0.26	0.53	0.37
Chittagong	-0.67	-2.02	-0.24	-0.57	-0.67	-1.31	-0.29	-0.48	-0.68	-1.35	-0.02	-0.06	-0.39	-0.26
Dhaka	-0.27	-0.91	-0.56	-1.23	-0.66	-1.31	0.22	0.4	-0.14	-0.28	-0.04	-0.15	-0.64	-0.48
Khulna	0.42	0.9	0.78	1.49	-0.35	-0.62	-0.57	-0.66	0.55	0.8	0.05	0.09	0.87	0.6
Rajshahi	-0.36	-0.72	0.15	0.28	-0.85	-1.37	-1.42	-1.49	-0.36	-0.53	-0.43	-0.75	0.19	0.14
Number of Observations	6463		3730		2407		3183		3280		2676		501	
Wald Chi-Squared	880.0		641.9		219.7		286.6		369.3		257.1		24.9	

Note: The estimation correcting for the potentially endogenous regressors was using the Newest minimum Chi-squared estimator in a two step approach. We instrument for household socio economic status, the head level of education and the household literacy using community level covariates. For rural areas, we include additional instruments related to distance to the local market and primary school.

Annex 5: Tobit Estimation of Grade Attainment

When all coefficients are allowed to vary by gender, there does not appear to be significant difference between boys and girls as far as their respective household economic conditions, at least for the 60% poorest households (cf. Annex 3). However, when the education of the household head is considered, preference still remains for educating boys and the gap in the coefficient's magnitude rises as the household head's education increases. Further, among illiterate households, girls are also more disadvantaged than boys.

Annex 3 also provides the same estimations by stipend recipient/non recipient category. Whenever the coefficient associated with the household head's education is significant, the magnitude is always higher for the group of recipients than it is for the group of non recipients. The stipend therefore seems to have had some impact on the grade attainment of children despite being poorly targeted to the most needy students. In particular, girls seem to have most benefit from the stipend in terms of grade attainment (the gender dummy being significantly different from zero).

Further, the marginal effects estimated at the censoring rate of the dependent variable show that children of the second, third, fourth and fifth quintiles are respectively 3.1%, 13.6%, 18.1% and 21.8% more likely to achieve higher grades than those from the poorest quintile. Similarly, children whose household head has incomplete primary school education have almost 14% more chance to stay longer in school than those whose head never went to school. The impact is about 25% larger for a child whose household head completed grade 10 relative to a child whose household head has no education. Moreover, girls are 7% more likely to achieve more years of schooling than boys. Finally, a student living in a household in which all adult members are illiterate has about 60% less chance to attain a higher grade than another student whose family is literate.

To account for community characteristics, variables such as distance to the nearest primary school and to the local market as well as the number of shifts in the primary school are introduced⁴¹. Distance to school or remoteness from local market seem to negatively influence children's grade attainment although the estimated coefficients are not statistically significant. However, the variable capturing whether the primary school has a shift appears significantly

⁴¹ These community variables were unfortunately only collected in rural areas. Therefore, inferences from the estimations can only be drawn for the rural sample of students.

negatively correlated with grade attainment. Does this imply that schools operating without shift tend to keep students longer in school compared to those under one or more shifts? A detailed school survey would probably help better understand the relationship between school characteristics and grade attainment or student achievement.

Annex 6: IV Estimation of Grade Attainment

Some of the regressors used in our estimations are likely to be endogenous simply because covariates such as parental education or the economic conditions of the household are likely to be correlated with unobserved factors. Therefore, the coefficients estimated may be biased. For instance, it is possible that some parents were able to complete primary or secondary school because they lived in a community in which the quality of school was better. It might also be the case that they used to live with relatives who exhibit high tastes for schooling or simply, because they are endowed with high ability to learn.

On the other hand, children from poor families may never enroll in school because their parents perceived low returns to education or the children themselves may be disabled or suffer from serious health challenges. Whereas, some well-off children may enjoy a better quality of education because their parents can afford to provide them with private tutoring or perhaps they have siblings abroad who send money for their education. To properly account for these unobserved household characteristics, we control for the endogeneity of parental education and the household socio-economic conditions.

The exogeneity test of the household head education, the household literacy and the economic status of the household were performed using the Smith-Blundell test (Econometrica 1986)⁴². The tests show that the exogeneity of these covariates is rejected since their computed F statistic are higher than the corresponding 5% critical value read from a standard F-distribution table. We therefore need to use a two stage least square estimation to correct for the endogeneity.

The two step estimation method used recourse to the Newey's minimum chi-squared estimator (1987)⁴³. We instrument for household socio economic status, the head level of education and the household literacy using community level covariates⁴⁴. For rural areas, additional instruments related to distance to the local market and to the primary school were included. Annex 6 shows, as in the non-instrumented estimations above, that girls tend to achieve higher grade attainment than boys, all else being equal; that the economic conditions of the household and the education level of the household head matter for children's educational attainment and finally that rural children are more likely to stay longer in school than urban students.

⁴² We use community level variables such as mean level of education of the household head, the average illiteracy rate, the distance to the local market or distance to the primary school to instrument for the socio-economic status of the household, the household head level of education and the household literacy suspected as potentially endogenous.

⁴³ The endogenous regressors are treated as linear functions of the instruments and the other exogenous variables.

⁴⁴ All instruments are significantly correlated with the endogenous regressors, even at the 5% significance level.

Annex 7: Policy Matrix

ISSUES	POLICY RECOMMENDATIONS
Teacher Recruitment	
<ul style="list-style-type: none"> - Initial deployment of teacher is still central. - DPE centrally advertises teacher recruitment. - All teachers hired under various development projects still need to transfer to revenue budget - No systematic information on teacher qualifications or projections linked to enrolment and PTIs capacities - Lack of qualified staff and vacant positions in PTIs, NAPE etc - Lack of an effective training strategy - Lack of incentives to retain competent and qualified teachers - Need for revision of C-in_Ed course at NAPE - 	<ul style="list-style-type: none"> - Instead of a single shift policy, adopting double or single shift system should be based on the excess or shortage in supply identified in different areas. - Recruitment of competent instructors, revision of teacher training curriculum, and an effective in-service training. - Pilot different approaches to compensate better performing teachers with an incentive structure characterized by clear and transparent criteria for rewarding and retaining the best performers coupled with an efficient recruitment and deployment practices.
Textbook	
<ul style="list-style-type: none"> - The entire NCTB staff is seconded with secondary and college teachers with no primary pedagogical experience. - Primary teachers cannot be seconded since NCTB functions under the Ministry of Education. - Procurement and distribution of textbooks did not always follow standard practices. - Lack of systematic inventory and stock taking textbook requirements - Improvements in printing and quality of textbooks - 	<ul style="list-style-type: none"> - Hire staff with relevant competencies , upgrade NCTB with relevant equipment to for effective management of textbook development and printing - Involve private participation for development and script writing on competitive basis -
Decentralization	
<ul style="list-style-type: none"> - Lack of a devolution plan under PEDP II -Lack of financing mechanisms at the school level for implementation of SLIPs or UPEPS -Insufficient capacity building at the school and Upazila levels. 	<ul style="list-style-type: none"> - Develop information campaigns on the delivery of services and resources from the Central Government to local level authority and schools to empower local communities, in the management of schools and resources for better quality of education. - Ensure that systematic transfer of funds takes place and personnel at the local levels receive relevant training on financial management. - Strengthening the capacities of the

	School Management Committees (SMCs) and the local level authorities in planning, management and utilization of resources. The School Level Improvement Plans (SLIPs) is being piloted under PEDP II.
Monitoring and Evaluation	
Bangladesh lacks an effective monitoring and evaluation system that collects reliable primary school information/data. DPE lacks resources to verify the reliability of the data	<ul style="list-style-type: none"> - Get appropriate staffing and logistic support to build an M&E system that develops local capacity to collect, analyze and use school data. - Create management incentives to train staff, both at the central and local levels, on techniques to collect and use reliable information and provide staff with incentives to use and improve their technical skills. - Outsource the function of collecting and analyzing school data and publishing. - Collaborate with the Bangladesh Bureau of Statistics (BBS) on the techniques of conducting household surveys to design school programs. - More rigorous evaluations of school quality initiatives would inform policymakers.
National Assessment	
- National Assessment Cell not fully functional	<ul style="list-style-type: none"> - Provide the NA cell with the appropriate staff endowed with training and experience in national assessments. - Retain staff after training and capacity building
Governance	
<ul style="list-style-type: none"> - Vacant positions at NAPE, PTIs, Districts and upazillas - Recommendations of the institutional analysis and human resource development plan yet to be implemented 	<ul style="list-style-type: none"> - Fill in all vacancies to strengthen the management and administrative capacities at the school level, line Divisions of DPE, Primary Teacher Institutes (PTIs) and the National Academy for Primary Education (NAPE). -
Political Economy	
-Need to invest in culture of evidenced based planning and collaborate with NGOs in education investments	<ul style="list-style-type: none"> - Better targeting of the primary stipend program to the poorest students and generally a more progressive redistribution of government primary education spending towards the poorest children. - Targeting efficiently the stipend to the

	<p>poorest students will require a third party monitoring.</p> <ul style="list-style-type: none">- Ensure access to education for children in slums, under-served and metropolitan areas.- Institute a stronger partnership with NGOs in the area of innovative and cost effective approaches to both school access and quality.
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